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Special Report 86-31

October 1986



**US Army Corps
of Engineers**

Cold Regions Research &
Engineering Laboratory

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A description of the building materials data base for Cincinnati, Ohio

Carolyn J. Merry and Perry J. LaPotin

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SECURITY CLASSIFICATION OF THIS PAGE

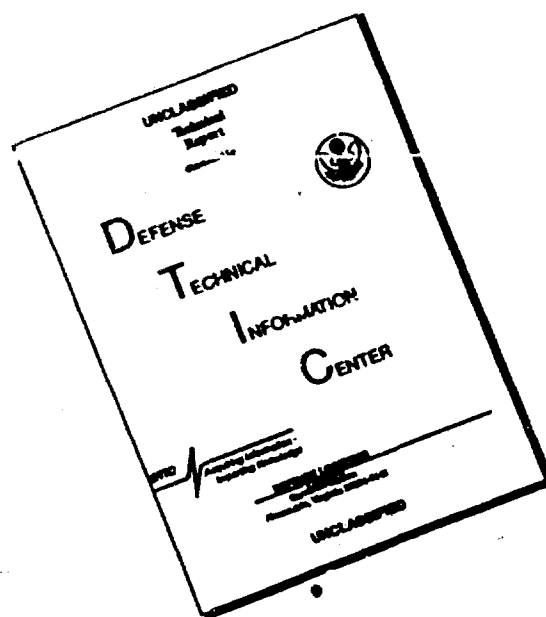
A/81 0-0

REPORT DOCUMENTATION PAGE

Form Approved
OMB No 0704-0188
Exp Date Jun 30, 1986

1a REPORT SECURITY CLASSIFICATION Unclassified			1b RESTRICTIVE MARKINGS		
2a SECURITY CLASSIFICATION AUTHORITY			3 DISTRIBUTION / AVAILABILITY OF REPORT Available for public release; distribution is unlimited.		
2b DECLASSIFICATION / DOWNGRADING SCHEDULE					
4 PERFORMING ORGANIZATION REPORT NUMBER(S) Special Report 86-31			5 MONITORING ORGANIZATION REPORT NUMBER(S)		
6a NAME OF PERFORMING ORGANIZATION U.S. Army Cold Regions Research and Engineering Laboratory		6b OFFICE SYMBOL (if applicable)	7a NAME OF MONITORING ORGANIZATION U.S. Environmental Protection Agency		
6c ADDRESS (City, State, and ZIP Code) Hanover, New Hampshire 03755-1290			7b ADDRESS (City, State, and ZIP Code) Washington, D.C.		
8a NAME OF FUNDING / SPONSORING ORGANIZATION		8b OFFICE SYMBOL (if applicable)	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER DW21930284-01-0		
8c ADDRESS (City, State, and ZIP Code)			10. SOURCE OF FUNDING NUMBERS		
			PROGRAM ELEMENT NO.	PROJECT NO.	TASK NO.
			WORK UNIT ACCESSION NO.		
11. TITLE (Include Security Classification) A DESCRIPTION OF THE BUILDING MATERIALS DATA BASE FOR CINCINNATI, OHIO					
12 PERSONAL AUTHOR(S) Carolyn J. Merry and Perry J. LaPotin					
13a TYPE OF REPORT		13b TIME COVERED FROM _____ TO _____		14. DATE OF REPORT (Year, Month, Day) October 1986	
				15. PAGE COUNT 88	
16. SUPPLEMENTARY NOTATION					
17 COSATI CODES			18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)		
FIELD	GROUP	SUB-GROUP	Acid precipitation, Cincinnati, Ohio, Damage assessment, Damage from acid deposition, Damage to buildings, Data bases, Environmental protection, Statistical analyses		
19. ABSTRACT (Continue on reverse if necessary and identify by block number) A building materials sampling program for the Cincinnati, Ohio, region was conducted in January and February 1985 to examine the types and amounts of building surface materials exposed to acid deposition. The stratified, systematic, unaligned random sampling approach was used to generate sample points across four sampling frame areas. A minimum of 70 sample points was examined per sampling frame to yield a total sample size of 387 points. Building sizes, surface materials, roof characteristics, roof-mounted apparatus, chimneys, gutters, downspouts and fences were recorded. This report provides an initial summary of the data collected. ←					
20 DISTRIBUTION / AVAILABILITY OF ABSTRACT <input checked="" type="checkbox"/> UNCLASSIFIED/UNLIMITED <input checked="" type="checkbox"/> SAME AS RPT <input type="checkbox"/> DTIC USERS			21 ABSTRACT SECURITY CLASSIFICATION Unclassified		
22a NAME OF RESPONSIBLE INDIVIDUAL Carolyn J. Merry			22b TELEPHONE (Include Area Code) 603-646-4307		22c OFFICE SYMBOL CRREL-RL

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PREFACE

This report was prepared by Carolyn J. Merry, Research Physical Scientist, Geological Sciences Branch, Research Division, U.S. Army Cold Regions Research and Engineering Laboratory, and Perry J. LaPotin, Senior Programmer, Department of Physics and Astronomy, Dartmouth College, Hanover, New Hampshire. This research has been funded as part of the National Acid Precipitation Assessment Program by the U.S. Environmental Protection Agency under reimbursable order number DW21930284-01-0.

The authors extend their appreciation to Dr. Harlan McKim (CRREL), who was a co-investigator on this project, for his support and helpful technical discussions on the study; to John Ridge, James Loper, Keith Hoss and Carter Sexton (Louisville District, Corps of Engineers) for gathering the building inventory data in Cincinnati; to Fred Bennet, Bob Woodyard and Don Reid (Louisville District) for their support of the field inventory program; to Cora Farnsworth (CRREL) for typing the data into the computer; to Sonya Travis and First Lieutenant Jeffrey Songco (CRREL) for coding the data from the worksheets; to Sonya Travis for assistance in editing the Cincinnati data base; and to Professor Thomas Adler (Thayer School of Engineering, Dartmouth College) and Dr. McKim for their technical reviews of this report.

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CONTENTS

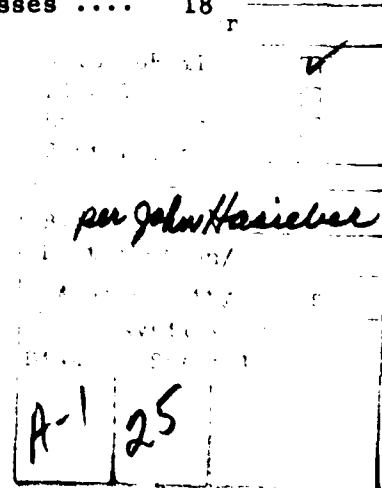
	<u>Page</u>
Abstract	1
Preface	11
Introduction	1
Background	1
Objective	2
Design of the field sampling program	2
Sample frame definition	2
Selection of sample points	4
Data description	6
Discussion	8
Conclusions	17
Literature cited	18
Appendix A: Data	21
Appendix B: Program listing for determining footprint size for each sampling frame	29
Appendix C: Results of the frequency analysis	33

ILLUSTRATIONS

Figure	
1. Site location map of Cincinnati, Ohio	2
2. Sampling frames for the Cincinnati, Ohio, area	4
3. Sample page of frequency analysis data	7
4. Census tracts for the Cincinnati, Ohio, area	10

TABLES

Table	
1. The ten Task Groups in the National Acid Precipitation Assessment Program	1
2. The U.S. Geological Survey land use and land cover categories	3
3. Number of sample points for the Cincinnati, Ohio, building materials inventory	5
4. Footprint sizes for the Cincinnati, Ohio, sampling frames	6
5. The 21 material types grouped into five material classes	15
6. Summary statistics of the five composite material classes	18



A DESCRIPTION OF THE BUILDING MATERIALS
DATA BASE FOR CINCINNATI, OHIO

Carolyn J. Merry
Perry J. LaPotin

INTRODUCTION

Background

→ The Interagency Task Force on Acid Precipitation manages the National Acid Precipitation Assessment Program (NAPAP). There are ten Task Groups, one for each of the nine research areas in the National Program and one for international activities (Table 1). The goal of NAPAP is to develop and improve a data base that will help researchers understand the causes and effects of acid deposition and how it can be effectively managed. Our work on the acid rain program has been with the Environmental Protection Agency in support of Task Group G, which looks at Effects on Building Materials and Cultural Resources. → 1473

Table 1. The ten Task Groups in the National Acid Precipitation Assessment Program (after Interagency Task Force on Acid Precipitation 1984).

<u>Task Group</u>		<u>Coordinating agency</u>
A	Natural sources	NOAA
B	Man-made sources	DOE
C	Atmospheric processes	NOAA
D	Deposition monitoring	DOI
E	Aquatic effects	EPA
F	Terrestrial effects	USDA
G	Effects on materials and cultural resources	DOI
H	Control technologies	EPA
I	Assessments	EPA
J	International activities	DOS

NOAA - National Oceanic and Atmospheric Administration
DOE - Department of Energy
DOI - Department of Interior
EPA - Environmental Protection Agency
USDA - United States Department of Agriculture
DOS - Department of State

1

New Haven, Connecticut, was selected as the first New England test site to obtain ground truth data on building surface materials (Interagency Task Subgroup G Meeting, 14 December 1983). Data were also collected in Portland, Maine, and Pittsburgh, Pennsylvania, as part of an ongoing effort to examine the type and extent of building materials exposed to acid deposition in the northeastern U.S. Once sensitive building materials are located and their distribution understood within a few "representative" locations, the information may then be extrapolated or applied to other cities in the United States (Merry and McKim 1984).

Objective

This report presents the data base of building materials collected for Cincinnati, Ohio (Fig. 1). Distribution summaries will be presented in the form of frequency tables, summary statistics, histograms and bar charts. The data will be analyzed to determine the suitability of the collected variables for predicting the distribution of building materials when all surveys are completed.



Figure 1. Site location map of Cincinnati, Ohio.

DESIGN OF THE FIELD SAMPLING PROGRAM

Sample frame definition

The city of Cincinnati, Ohio, was subdivided into the sampling frames of Urban Central Business District (UCBD), Urban Livelihood, Industrial-Commercial (ULIC), Urban Multi-Family Residential (UMFR), Urban Single-Family Residential (USFR), Nonurban Suburbanizing (NSUB) and Nonurban Rural (NRUR) (Fig. 2). Each sampling frame consists of a number of census tracts that have a commonality on the basis of population density, single-unit dwellings and land use (Rosenfield 1984). The two 1980 census variables used to group the census tracts were population density (in persons per square kilometre), and dwelling units in one-unit structures (%). The three variables of land use (circa 1973) used for the grouping were built residential area (%), built nonresidential (%) and open land (%) (Table 2). The water surface area within a tract was not considered, since it was

Table 2. The U.S. Geological Survey land use and land cover categories (after Anderson et al. 1976 and Rosenfield 1984).

<u>Collapsed categories</u>	<u>Level I</u>	<u>Level II</u>
Built residential	1 Urban or builtup land	11 Residential
Built nonresidential		12 Commercial and services
		13 Industrial
		14 Transportation, communications and utilities
		15 Industrial and commercial complexes
		16 Mixed urban or builtup land
		17 Other urban or builtup land
Open land, with buildings	2 Agricultural Land	21 Cropland and pasture
		22 Orchards, groves, vineyards, nurseries and ornamental horticultural areas
		23 Confined feeding operations
		24 Other agricultural land
Open land, without buildings	3 Rangeland	31 Herbaceous rangeland
		32 Shrub and brush rangeland
		33 Mixed rangeland
	4 Forest Land	41 Deciduous forest land
		42 Evergreen forest land
		43 Mixed forest land
Omitted from analysis	5 Water	51 Streams and canals
		52 Lakes
		53 Reservoirs
		54 Bays and estuaries
Open land, without buildings	6 Wetland	61 Forested wetland
		62 Nonforested wetland
	7 Barren Land	71 Dry salt flats
		72 Beaches
		73 Sandy areas other than beaches
		74 Bare exposed rocks
		75 Strip mines, quarries and gravel pits
		76 Transitional areas
		77 Mixed barren land

improbable that a building would be sited there. These data were used in the Statistical Analysis System (SAS) to develop a trial classification. The classifications were adjusted by a discriminant function and by reviewing on the map the location and juxtaposition of tracts and the overall pattern of the tract classes.*

* Personal communication with James Wray, U.S. Geological Survey, 1984.

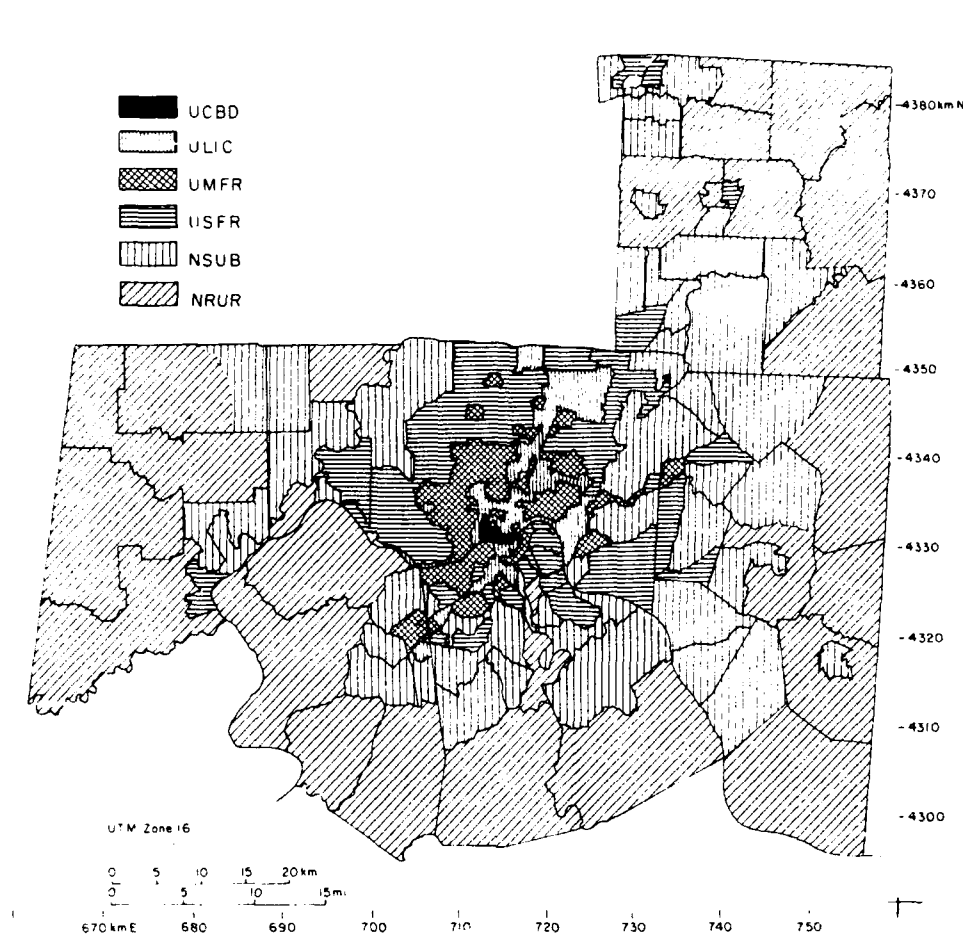


Figure 2. Sampling frames for the Cincinnati, Ohio, area (after Wray 1984).

Selection of sample points

The sample size of 70 was calculated previously from the Revere, Massachusetts, data base of buildings (Merry and LaPotin 1985a) by multiplying the minimum sample size determined from the cumulative multinomial distribution (30) by the design effect (2.34) using the Revere data (see Rosenfield 1984). To ensure the minimum of 70 buildings per sampling frame, 107 sample points were selected for each sampling frame (allowing for empty footprints in 35% of the sampled locations). The allowance for 35% empty footprints was determined from prior sampling studies in New Haven, Connecticut, and Pittsburgh, Pennsylvania (Merry and LaPotin 1985b, 1986a).

Table 3. Number of sample points for the Cincinnati, Ohio, building materials inventory.

Sampling frame	Number of points with buildings	Number of empty points	Total points
UCBD	72 (73%)	27 (27%)	99 (100%)
ULIC	48 (52%)	45 (48%)	93 (100%)
UMFR	47 (48%)	51 (52%)	98 (100%)
USFR	69 (71%)	22 (29%)	97 (100%)
NSUB	-	-	(92) (100%)
NRUR	-	-	(100) (100%)
Total*	236 (61%)	151 (39%)	387 (100%)

* Reflects only the sampled footprints. The points in the NSUB and NRUR sampling frames were not inventoried during the field survey.

The sample points were generated by the U.S. Geological Survey using a stratified, systematic, unaligned random sampling procedure. A similar sampling procedure (stratified, systematic, unaligned) was used previously by the U.S. Geological Survey for selecting samples for use in accuracy testing of the land use and land cover maps produced under the National Land Use and Land Cover Mapping Program (Ling and Rosenfield 1980). The advantage of the systematic sampling algorithm is that it distributes the sample units equitably over the entire sampling frame. In addition, it is area-weighted, which means that points are allocated on the basis of area (Rosenfield 1984). Table 3 shows the total number of points that were generated for the Cincinnati field survey program. The UTM coordinates for each sample point are shown in Appendix A.

Each sample point had a corresponding "footprint" or a given spatial area on the ground that had to be examined in the field. The total land area and the density of buildings (using the number of dwelling units) for each sampling frame from the 1980 census data were used as input to a simple PASCAL program written to determine the footprint size for each sampling frame (Appendix B). The footprint areas were constrained to sample no more than 30% of the total UCBD sampling frame. The final footprint sizes are presented in Table 4.

The field program began in January 1985 and was completed within two months by two-person teams. One person normally recorded the dimensions and material types of the building, the other person took photographs of the building and used an optical rangefinder to determine building height. Because of monetary constraints, only the four most urban sampling frames (i.e., UCBD to USFR) were inventoried in Cincinnati.

The building worksheet was developed by a committee composed of representatives from CRREL, the U.S. Environmental Protection Agency at Research Triangle

Park, N.C., and the U.S. Bureau of Standards. The worksheet form was designed to provide information on the location of the building in UTM coordinates; characteristics of the surrounding terrain in terms of census tract, land use type and sampling frame; dimensions and type of building; lot size dimensions; material distribution percentages in the foundation, first story and all above stories; and the surface area and material types for the roof, roof-mounted apparatus (vents, flues, stacks, skylights and flashing), chimneys, rain gutters, downspouts and fences. The worksheet used in the Cincinnati field survey is shown in Appendix A.

DATA DESCRIPTION

Each sample point was recorded on an individual data sheet during the survey. If the sample point was empty, the sections concerning description of the building were coded as zeros. If there was more than one building per sample point, a separate worksheet was completed for every building. From our Pittsburgh field inventory, we found that the number of buildings within a footprint could be quite high (Merry and LaPotin 1986a). Therefore, we modified the field sampling procedure to sample only the building closest to the center of the footprint, with the constraint that at least 10% of the footprint area was to be inventoried. In this manner, a maximum of three buildings was sampled for any individual

Table 4. Footprint sizes for the Cincinnati, Ohio, sampling frames.

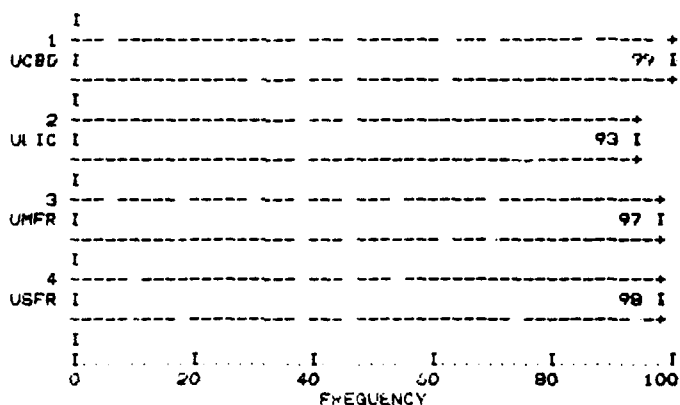
Sampling frame	Footprint size (ft)	(m)
UCBD	435	133
ULIC	223	68
UMFR	201	61
USFR	321	98
NSUB	790	241
NRUR	1608	490

footprint. If more than one building was inventoried, a random selection was made of one of them and coded into our data base. The data were checked several times using the procedures outlined in Appendix A.

Appendix C describes the variables assigned to the Cincinnati field data. The frequency runs for the variables are organized by variable type (e.g., major classification, census tract data, general building description). Page formats are organized so that for each variable, numeric summaries are provided first (for example, the labels for each value with frequency of occurrence and percent of the distribution), followed by graphic presentation (histogram or bar chart), and ending with statistical summaries (for example, mean, mode, skewness and kurtosis). The sample size is presented at the bottom of each summary section, along with the

SFRAME SAMPLING FRAME

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
UCBD	1	99	25.6	25.6	25.6
ULIC	2	93	24.0	24.0	49.6
UMFR	3	97	25.1	25.1	74.7
USFR	4	98	25.3	25.3	100.0
	TOTAL	387	100.0	100.0	



MEAN	2.501	STD. ERR.	.057	MEDIAN	3.000
MODE	1.000	STD. DEV.	1.128	VARIANCE	1.271
KURTOSIS	-1.381	S.E. KURT	1.995	SKEWNESS	-.009
S.E. SKEW	.124	RANGE	3.000	MINIMUM	1.000
MAXIMUM	4.000	SUM	968.000		

PERCENTILE	VALUE	PERCENTILE	VALUE	PERCENTILE	VALUE
10.00	1.000	25.00	1.000	33.30	2.000
50.00	3.000	56.70	3.000	75.00	4.000
90.00	4.000				

VALID CASES 387 MISSING CASES 0

Figure 3. Sample page of frequency analysis data.

number of missing cases (or observations). Each observation corresponds to a footprint sample point for the four sampling frames in Cincinnati. Figure 3 is an example of how the frequency runs are presented in Appendix C.

Variables with continuous distributions or discrete variables with large numeric diversity are graphically represented by a histogram. Variables with small numbers of categories (e.g., sampling frame and land use), are presented by horizontal bar charts with the sample sizes shown within the bar areas. Summary statistics are included to describe the variable's distribution (e.g., mean, median, skewness and kurtosis).

Certain variables act as descriptors of building materials exposure and distribution, for example, exposed walls in footprint (EWIF) and average wall height (HT). Their corresponding frequency runs are tabulated using the sample of size 236, where buildings were observed in the footprints (Table 2). All other variables, not related to the building description, use the 387 total cases.

The column headings marked VALUE represent the actual observed value for the variable. Frequency (denoted FREQ) represents the number of cases falling within the category. Percent (PCT) and cumulative percent (CUM PCT) represent the percent of the total falling within the specified category and the running cumulative percent, respectively; the cumulative percent for the last category is always 100.

The data were analyzed using the Statistical Package for the Social Sciences (SPSS) software on a VAX-11/785 minicomputer (Nie et al. 1975). More in-depth discussion of the summary statistics used can be found in most elementary applied statistics texts (e.g., Snedecor and Cochran 1980).

DISCUSSION

The frequencies provided in Appendix C are separated into six sections.

The Major Classification Variables are land use designation (LU), sampling frame (SFRAME), sample point number (SPOINT) and census tract (TRACT) for the 387 total observations.

The land use classification for each sample point (LU) was based on its location within the digital land use data base from the Geographic Information Retrieval and Analysis System (GIRAS) (Mitchell et al. 1977). The aerial photography used in GIRAS is from 1972-74 (Loelkes 1977). The

minimum mapping unit for the land cover map is 10 acres (0.04 km²) for the level II categories 11-17, 23-24, 51-54, 75 and urban occurrences of 76 (Table 2). The minimum mapping unit for the remaining level II categories was 40 acres (0.16 km²).

Almost half of the sampled structures fall within the residential land use class (LU). Another 21% are within the commercial and services land use class, 15% are within the transportation land use class and 11% are within the industrial class. These four land use types make up 93% of the footprints sampled. Cumulative percents show that 98% of the sample points fall within the level I category of urban or builtup land, with the remaining 2% found within the level I category of agriculture (the cropland category).

The sampling frame number (SFRAME) shows the distribution of footprints within a given sampling frame. The distribution is uniform across the four sampling frames, with between 93 and 99 footprints per frame. The minimum number of sampled points for a given subcategory is 93, corresponding to the ULIC class. The frequency table for SFRAME displays the sample point distribution. The histogram shows that all of the sampling frames contain the minimum of 93 points.

The census tract (TRACT) variable represents the distribution of sampled footprints within a given 1980 census tract. The majority of sample points (17%) are within census tract 10, census tract 1 in Figure 4 (each census tract shown in Appendix C should be divided by 10 to account for subdivided census tracts) that corresponds to the UCBD sampling frame (Fig. 2 and 4). Another 9% were found within two census tracts (40 and 60 located within UCBD [4 and 6 in Fig. 4]) and 4% within tract 7010 (701 in Fig. 4) in the UMFR. The remaining 71% of the sample points are distributed uniformly, ranging from 1 to 9 sample points observed within each of the remaining sampled tracts. The histogram has three modes, illustrating that most of the sampled structures fall in the following tracts: 40% in tracts that number less than 1000, 24% between tract numbers 2100 and 2600, and 27% in tracts with a number above 5100.

The second section in Appendix C is the available Census Tract Information. These seven variables are derived from the U.S. Bureau of Census (1980) for the land areas within the five land use classes given by the U.S. Geological Survey GIRAS data base (corresponding to the 131 sampled

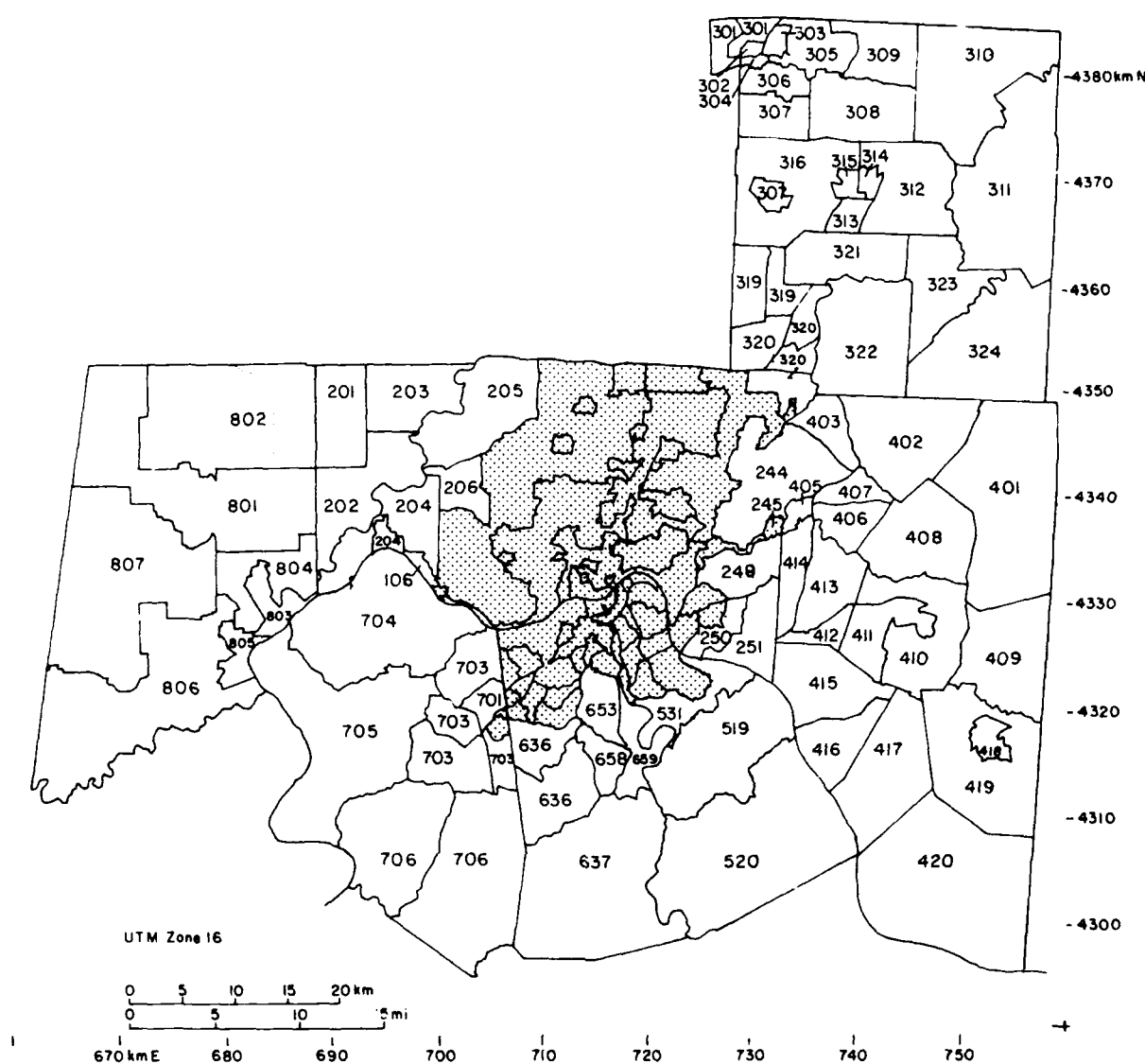


Figure 4. Census tracts for the Cincinnati, Ohio, area (after US Census Bureau 1980).

census tracts in Cincinnati). They are the total population in the census tract (POP), the total number of housing (dwelling) units in a census tract (DU) and the number of dwelling units in one-unit structures (U1), and the following four land cover classes: the built residential land use (ABR), the built nonresidential land use (ABNR), the open land containing buildings (AOB) and the open land containing no buildings (AO). All are in millions of square feet.

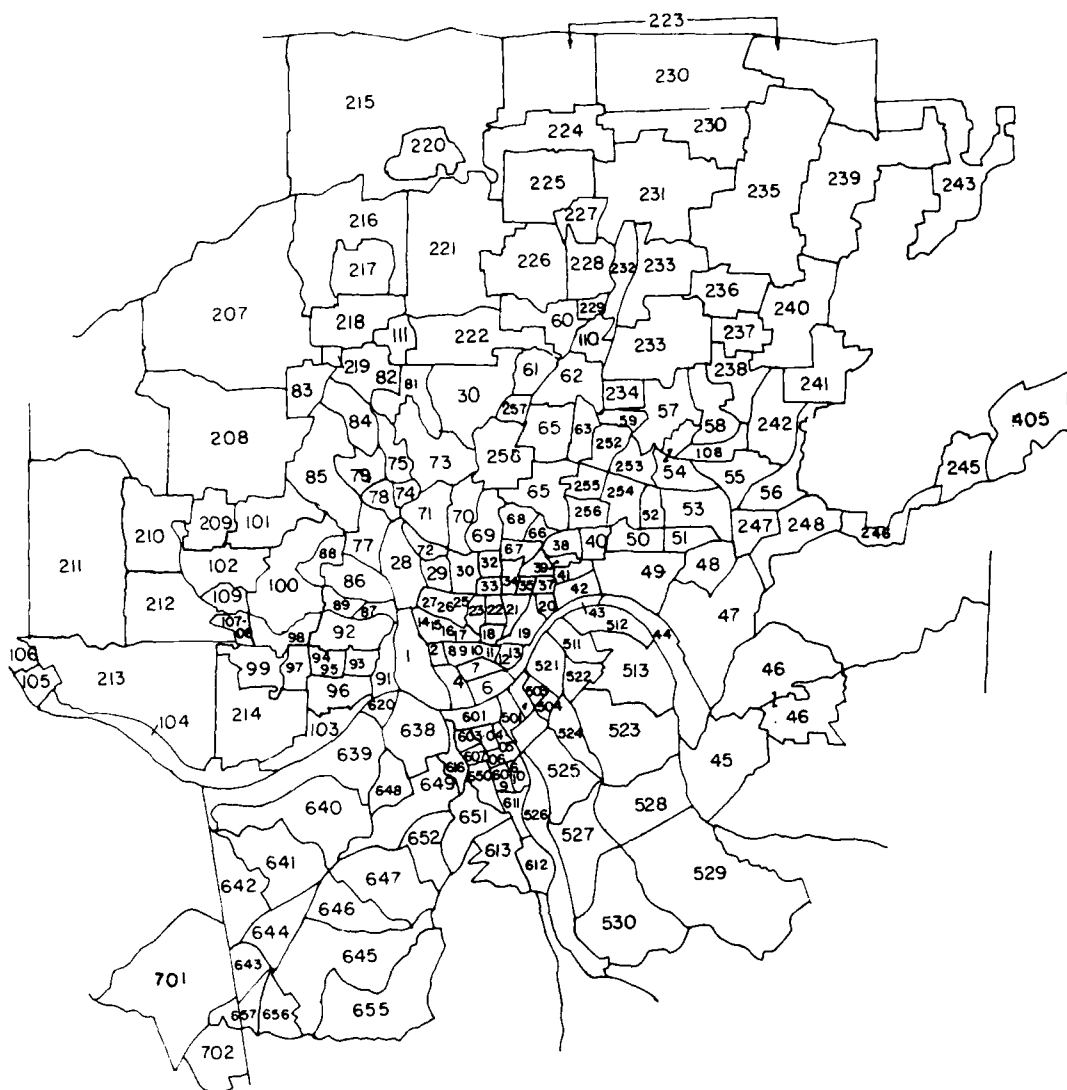


Figure 4 (cont'd).

The distribution of tract population (POP) indicates that 17% of the footprints were located in tracts with 172 persons. The average population per tract across the sampled region is 3778 persons, with a median value of 3488 persons. The populations of the Cincinnati tracts vary from 172 to over 14,060 people per census tract. However, percentiles suggest that the majority of tracts contained fewer than 7705 people (90%).

The total dwelling units in a given tract (DU) varies from 6 to 4897 units, with an average of 1433 dwelling units. The mode of 6 dwelling units per tract occurred in 17% of the sample. The inner quartile about the median ranges from 551 to 2129 total dwelling units per tract. The

average number of one-unit structures (U1) in a tract is 834. The range of dwelling units varies from 1 to 3524 units, with the most common value of one single-unit structure per tract (26%).

The built residential category (ABR) includes the level II urban category of residential (see Table 2). The built nonresidential category (ABNR) includes the urban categories of commercial and services, industrial, transportation, communications and utilities, industrial and commercial complexes, and the mixed urban or builtup land. The open land with buildings category (AOB) includes the other urban or builtup land, and the entire level I category of agricultural land. The open without buildings category (AO) includes the level I categories of rangeland, forest land, wetlands and barren land.

The land distribution in Cincinnati tends to favor built residential (ABR). Comparing medians, one notes that ABR covers 1.3 million ft², while built nonresidential (ABNR) accounts for 900,000 ft². Open land with buildings (AOB) is an order of magnitude larger than the comparable (AO) area without buildings (AOB = 70,000 ft²; AO = 7000 ft²).

General Building Descriptions, including wall dimensions, are the third section in Appendix C. Frequencies are tabulated using the 236 cases where buildings were observed. Variables include the approximate age of the structure (AGE), exposed walls in the footprint (EWIF), average wall height (HT), lot size (LOT1 and LOT2), number of buildings in the footprint (NBUILD), building dimensions (SIDE1 and SIDE2) and the building type (TYPE).

The first variable, AGE, represents the approximate age of the structure using the year 1900 as a base (e.g., 1984 is represented as 84, 1900 as zero, and 1801 as -99). Only 4% of the observed structures were built prior to 1900. The majority of the structures observed were built from 1930 to the present. There was a spread of 133 years in building age, a mean construction date of 1950 and a median construction date of 1959; the most frequently observed construction date was 1970. The upper third of the building age distribution begins in 1970.

The exposed walls in footprint (EWIF) is the perimeter (in feet) of the buildings contained within the footprint. EWIF is recorded for use in calculating the portion of the building wall surfaces observed within a sampled footprint. Of the 236 structures sighted, 67% show EWIF values of

280 ft and below. The histogram indicates that the distribution is skewed to the right (skewness = 1.4), with a mean value of 335 ft and a lower median value of 192 ft. The percentiles indicate that 90% of the observed structures display EWIF values below 999 ft; the inner quartile about the median ranges from 148 to 417 ft.

The average wall height (HT) in feet for a sampled structure is also provided. Over a quarter of the buildings are lower than 18 ft, and the cumulative percents suggest that the majority of observed wall heights are below 30 ft (81%). Using 12 ft per story as an average, we see that 5% of the observations are of one-story structures, 45% two-stories and below, and 88% three-stories and below. The mean value of 28 ft corresponds to an average building size of slightly over two stories. The standard deviation of 17 ft reflects the small variance of buildings found in Cincinnati, relative to the maximum observed height of 160 ft.

Lot size (LOT1 and LOT2) represents the side dimensions (in feet) of the plot of ground surrounding the building being sampled. LOT1 represents the length of the plot and LOT2 represents its respective width. The person on the survey team estimated the lot size by using markers, such as fences and the proximity of adjacent buildings. The average lot dimension was of length 201 ft and of width 243 ft. The median lot size was 100 ft in length by 150 ft in width. The most frequently observed lot dimension was 100 ft. The percentiles show that 67% of the lot dimensions were 200 ft and below. The overall range of lot dimensions was 979 ft in length and 949 ft in width.

NBUILD was a variable added to the data set to represent the total number of buildings within a footprint. Because in Pittsburgh the survey teams encountered a large number of buildings to sample within the footprint area for the UCBD sampling frame (Merry and LaPotin 1986a), we decided to inventory the building located closest to the center of the footprint, with the constraint that 10% of the footprint would be sampled. In addition, no more than three buildings per footprint were to be sampled at each point (an economic constraint). About 26% of the footprints contained either one or three buildings. The average number of buildings found within a footprint was three. Approximately 12% of the sampled footprints contained four or more buildings.

The variables SIDE1 and SIDE2 are, respectively, the length and width dimensions (in feet) of the building. The average building dimension is 123 ft in length by 113 ft in width. The median building dimension is smaller — 60 ft in length by 40 ft in width. The range of dimensions is 989 ft for SIDE1 and 993 ft for SIDE2, while the most frequently occurring dimension is 30 ft for both SIDE1 and SIDE2. Both distributions are skewed to the right (skewness values of 2.5 and 2.8 respectively) suggesting more smaller-sized structures.

The building type classification (TYPE) is used for categorizing the use of the individual structures being sampled. In the frequency distribution, 151 (39%) of the 387 sampled footprints resulted in no structures being observed (Table 3). Of the footprints containing buildings (236), almost half were found to be one-unit residential structures. The other significant building type was commercial buildings (39%). The remaining building types contained from 1 to 6 observations per category.

Actual Spatial Areas of Building Material Types are presented in the fourth part of Appendix C for the five composite building material classifications recommended by the Interagency Task Force*. These areas represent the square footage of building surface walls potentially exposed to acid deposition. The five composite building materials computed are painted materials (APAIN), mortar/masonry (AMORT), stone materials (ASTONE), galvanized metal (AGALV) and all other materials (AOTHER). From the original building worksheet (Appendix A), the 21 material types were grouped into the above five categories (Table 5).

For the area of painted materials (APAIN), 8% of the sampled structures had no painted wall surface area. The 236 sampled structures showed a mean painted wall exposure of 3821 ft² and a median painted exposure of 1900 ft². The standard deviation of 6301 ft² is not surprising, given the range in exposures among individual structures of 67,736 ft². The distribution is extremely skewed to the right (skewness = 5.4) and is far more peaked (kurtosis = 46.2) than a normal distribution with similar mean and standard error; 90% of the painted exposure per structure was found to be below the 9960 ft² level.

Areas of exposed mortar-masonry material (AMORT) were observed on 166 structures, indicating that 30% of the footprints with buildings had no

* Personal communication with F. Lipfert, Brookhaven National Laboratory, 1984.

Table 5. The 21 material types grouped into five material classes.

APAIN

- Painted wood (excl. stained)
- Painted steel
- Painted aluminum
- Painted masonry
- Painted concrete
- Painted stucco
- Painted other material
- Painted other material (cannot identify)

AMORT

- Bare brick
- Bare block
- Bare field stone

AGALV

- Bare galvanized steel

ASTONE

- Bare marble
- Bare limestone
- Bare granite

AOTHER

- Bare wood (incl. stained)
- Bare concrete
- Bare glass
- Bare vinyl
- Bare other material
- Bare other material (cannot identify)

mortar-masonry exposure. The mean mortar-masonry surface area (4502 ft²) is higher than the median exposure (1770 ft²), reflecting the skew of the distribution to the right (skewness = 4). The range of mortar-masonry surface area is 69,930 ft²; however, the percentiles suggest that 75% of the sampled structures exhibited mortar-masonry exposures of 3501 ft² and below. Only 10% of the structures had exposures greater than 11,339 ft².

Most structures in the Cincinnati sample exhibited little or no bare stone exposure (ASTONE). Cumulative frequencies indicate that 85% of the footprints with buildings have no exposed bare stone surfaces. Percentiles indicate that 90% of the sampled buildings displayed 355 ft² or less of bare stone materials; the median and mode values were 0. The maximum exposed surface area was 24,273 ft².

A small number of structures (2%) had bare galvanized steel exposure (AGALV). Of the 236 footprints with buildings, 6 structures were composed of some portion of bare galvanized steel. Of the sampled footprints with buildings, 98% have no galvanized steel exposure. The summary statistics show a median and mode of 0, with a mean exposure of 47 ft²; the maximum exposed galvanized steel surface area was 7541 ft².

The fifth composite material class is the remaining materials category (AOTHER) that includes all other materials not classified into the above categories. The surface areas of the AOTHER category are relatively continuous and nonclustering, with a uniform frequency distribution. The percentile values reflect the uniformity of the distribution for surface wall areas of 566 ft² and below at the 75th percentile. The 90th percentile rises sharply to a maximum exposure for an individual building of 2332 ft² and above.

The fifth section in Appendix C is the Roof and Roof-Mounted Apparatus Items and Material Types. It contains the variables of exposed chimney area (CAREA), chimney material (CMAT), exposed roof area (ESAREA), roof material (ERMAT), roof slope (SLOPE) number of roof-mounted apparatus items or area (ITEM1, ITEM2, FLAREA) for the 236 observed buildings, and the roof apparatus material (RMAT, SKYM, FLMAT).

Nearly half of the structures had no chimney (CAREA = 0). The mean surface area of an observed chimney is 58 ft² with a standard deviation of 184 ft²; 67% of chimney surface areas are 36 ft² and below. Values greater than 36 ft² rise uniformly toward a surface area of 800 ft²; there were two 1800-ft² chimneys. The majority of chimneys (CMAT) were brick (42%). Less than 10% of the chimneys were painted or made of some other type of material.

The exposed surface area of the roof (ESAREA) shows a wide range of values from 60 to 488,400 ft². The mean surface area is 24,910 ft², with the most frequently occurring roof area (ESAREA) being 1200 ft², far below the average value. The standard deviation is twice the mean at 55,589 ft². The percentile values indicate that 67% of the roof areas are less than 7063 ft². The exposure rises sharply, however, over the upper 33% of the distribution.

The roof material (ERMAT) was predominantly asphalt shingle (53%). Roofs of other material types (30%) were also prevalent in Cincinnati.

Over two-thirds of the roofs were sloped, rather than flat, as illustrated by the horizontal bar chart for the variable SLOPE.

There were 160 occurrences of vents, flues and stacks in the Cincinnati sample (ITEM1). These items (RMAT) were principally bare galvanized (31%), painted material (15%) and other material types (13%).

Only one skylight was observed in Cincinnati (ITEM2). The framing material of the skylight was made of bare galvanized metal (SKYM).

There were 70 occurrences of flashing material (FLMAT) recorded. Bare galvanized (18%) was the predominant material type. The flashing area, (FLAREA) ranged from 1 ft² to over 999 ft². The average area was 23 ft², with a median and mode value of 0, reflecting the absence of flashing materials within the sampled region.

The last part of Appendix C presents the variables of Rain Gutters, Downspouts and Fences for the 236 sampled structures. Rain gutters (RGMAT), and downspouts (DSPOUT) were found on 171 structures. Most rain gutters and downspouts were painted. The average length of a rain gutter (RGLLENGTH) was 127 ft; for a downspout (DSLENG) the average length was 64 ft. A standard deviation of 173 ft was observed for the rain gutter length; the standard deviation was smaller for the downspouts, 112 ft.

There were 68 fences (FENCE) observed within the sampled footprints. Both fence length and height were recorded in the field, but were multiplied together to obtain the fence area variable (FAREA). The material type was principally bare galvanized chain link (18%). The average fence area was 197 ft², with a standard deviation of 359 ft².

CONCLUSIONS

A building materials sampling program for the Cincinnati, Ohio, area was conducted during January and February 1985. The stratified, systematic, unaligned random sampling procedure was applied to generate sample points across the six sampling frame areas. Using this procedure, a total of 579 points with a minimum of 93 sample footprints per frame were surveyed. A diverse data set was taken on building size and surface material, roof characteristics and roof apparatus, chimneys, gutters, downspouts and fences. The Cincinnati data are summarized according to overall material distribution by structure.

Table 6. Summary statistics of the five composite material classes.

Composite material class	Mean exposure (ft ²)	Median exposure (ft ²)	Inner quartile (ft ²)	Range (ft ²)	Structures not exhibiting the material (%)
APAIN	3821	1900	561 to 4567	67736	8
AMORT	4502	1770	0 to 3502	69930	30
AGALV	47	0	0 to 0	7541	98
ASTONE	619	0	0 to 0	24273	85
AOTHER	1362	150	0 to 566	52448	44

As was found with the surveys for New Haven, Connecticut, for Portland, Maine, and for Pittsburgh, Pennsylvania, the appropriateness of the five composite material categories was seriously questioned (Merry and LaPotin 1985b, 1986a and b). In Table 6, a number of summary statistics have been assembled to reinforce this conclusion. The two categories of AGALV and ASTONE are seriously under-sampled, whereas the AOTHER category containing numerous other material types is over-used (56% occurrence frequency). In addition, inner quartiles suggest that APAIN is over-sampled; APAIN contains too many painted categories of materials and is identified on 91% of Cincinnati's sampled structures. We feel that the composite material classifications should be redistributed for future analysis of this data base. In particular, painted materials should be declustered, and galvanized and bare stone exposure should be contained within the AOTHER category, reflecting their lack of exposure in Cincinnati and in the previous three surveys of New Haven, Portland and Pittsburgh. Other categories should be constructed from the AOTHER materials. These measures would emphasize specific materials whose exposure is being masked in the present composite material classes.

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APPENDIX A: DATA

Listing of UTM coordinates for each sample point

	<u>UTM East</u>	<u>UTM North</u>	<u>CENS</u>	<u>LU</u>		<u>UTM East</u>	<u>UTM North</u>	<u>CENS</u>	<u>LU</u>
01.	712660.	4333000.	1	14	70.	714050.	4330090.	4	14
02.	712720.	4332970.	1	13	71.	714300.	4330960.	4	12
03.	712990.	4332791.	1	14	72.	714300.	4330789.	4	14
04.	712560.	4332761.	1	14	73.	714460.	4330649.	4	14
05.	712630.	4332679.	1	14	74.	714650.	4330650.	4	12
06.	713110.	4332640.	1	14	75.	714280.	4330621.	4	14
07.	712691.	4332559.	1	13	76.	714541.	4330601.	4	12
08.	712459.	4332441.	1	14	77.	714579.	4330290.	4	14
09.	712739.	4332440.	1	14	78.	714321.	4330241.	4	14
10.	712920.	4332440.	1	13	79.	714529.	4330090.	4	13
11.	713141.	4332351.	1	12	80.	714609.	4330040.	4	13
12.	713261.	4332310.	1	14	81.	714380.	4329869.	4	13
13.	712830.	4332200.	1	12	82.	716179.	4330090.	6	12
14.	712750.	4332160.	1	14	83.	716120.	4330759.	6	12
15.	713320.	4332141.	1	14	84.	715739.	4330710.	6	14
16.	712430.	4332061.	1	14	85.	715130.	4330670.	6	12
17.	713210.	4332030.	1	12	86.	714940.	4330659.	6	12
18.	713379.	4331920.	1	14	87.	715760.	4330639.	6	14
19.	712740.	4331881.	1	12	88.	715160.	4330609.	6	12
20.	712871.	4331840.	1	12	89.	714990.	4330589.	6	12
21.	712520.	4331800.	1	14	90.	715460.	4330579.	6	14
22.	712771.	4331780.	1	14	91.	714801.	4330460.	6	14
23.	713330.	4331759.	1	14	92.	715670.	4330461.	6	12
24.	712759.	4331700.	1	14	93.	715901.	4330419.	6	12
25.	712390.	4331630.	1	14	94.	715570.	4330400.	6	12
26.	713070.	4331561.	1	14	95.	715341.	4330370.	6	12
27.	712460.	4331550.	1	13	96.	714820.	4330341.	6	14
28.	712690.	4331500.	1	14	97.	714090.	4330339.	6	14
29.	712870.	4331471.	1	12	98.	715160.	4330181.	6	12
30.	713099.	4331390.	1	12	99.	714670.	4330030.	6	13
31.	713381.	4331340.	1	14	01.	715111.	4331099.	7	12
32.	713330.	4331210.	1	12	02.	713810.	4332171.	15	12
33.	713050.	4331199.	1	12	03.	716220.	4331999.	19	12
34.	712699.	4331141.	1	14	04.	715280.	4332419.	23	12
35.	712480.	4331129.	1	13	05.	712491.	4330219.	20	15
36.	712950.	4331110.	1	12	06.	712730.	4334929.	20	15
37.	712880.	4331061.	1	12	07.	713230.	4333660.	20	11
38.	713080.	4331020.	1	12	08.	712619.	4333260.	20	14
39.	712619.	4330971.	1	13	09.	714690.	4334951.	30	12
40.	713370.	4330940.	1	12	10.	715090.	4334950.	30	11
41.	713610.	4330919.	1	12	11.	714790.	4334501.	30	12
42.	713710.	4330890.	1	12	12.	717290.	4334049.	37	11
43.	712360.	4330880.	1	14	13.	717590.	4333470.	37	11
44.	713540.	4330860.	1	12	14.	717529.	4335359.	38	14
45.	713220.	4330800.	1	14	15.	722250.	4330641.	44	14
46.	713690.	4330779.	1	14	16.	722630.	4330060.	44	17
47.	713289.	4330760.	1	14	17.	724700.	4334460.	47	21
48.	712380.	4330751.	1	14	18.	724740.	4333141.	47	21
49.	712540.	4330729.	1	14	19.	723750.	4332550.	47	17
50.	714090.	4330721.	1	14	20.	722510.	4330980.	47	14
51.	712920.	4330701.	1	14	21.	721419.	4337650.	54	14
52.	713659.	4330511.	1	13	22.	723021.	4338050.	55	12
53.	713719.	4330490.	1	13	23.	724849.	4337549.	55	11
54.	712840.	4330470.	1	13	24.	718061.	4341690.	51	12
55.	713350.	4330470.	1	13	25.	717520.	4339941.	64	13
56.	713930.	4330450.	1	13	26.	717180.	4339580.	64	14
57.	713010.	4330430.	1	13	27.	717960.	4338449.	64	13
58.	713661.	4330319.	1	13	28.	716890.	4335909.	68	12
59.	713760.	4330259.	1	13	29.	711570.	4335510.	77	12
60.	714130.	4330190.	1	13	30.	711731.	4337280.	70	17
61.	713000.	4330170.	1	13	31.	711931.	4330999.	91	13
62.	713050.	4330090.	1	13	32.	707270.	4333500.	109	16
63.	714139.	4330010.	1	13	33.	718641.	4352199.	223	12
64.	713990.	4329999.	1	13	34.	719810.	4352080.	223	14
65.	714160.	4329940.	1	13	35.	719730.	4345191.	220	12
66.	713970.	4329870.	1	13	36.	722440.	4352350.	230	14
67.	714320.	4331141.	4	12	37.	722780.	4352320.	230	12
68.	713930.	4331110.	4	14	38.	724781.	4352320.	230	21
69.	714500.	4331079.	4	12	39.	722260.	4352160.	230	14

	UTM East	UTM North	CENS	LU
40.	720910.	4351050.	230	13
41.	721489.	4350910.	230	13
42.	723240.	4350540.	230	11
43.	721959.	4349620.	230	13
44.	724820.	4349021.	230	11
45.	724390.	4348000.	230	11
46.	722540.	4348040.	231	12
47.	722270.	4348470.	231	15
48.	723061.	4348019.	231	11
49.	721230.	4346630.	231	21
50.	722760.	4346300.	231	11
51.	720860.	4345829.	232	13
52.	722150.	4345520.	232	11
53.	723121.	4344950.	232	11
54.	722140.	4344330.	232	12
55.	726540.	4346670.	235	11
56.	726010.	4346660.	235	13
57.	724931.	4346610.	235	21
58.	723870.	4345900.	235	11
59.	726530.	4345890.	235	11
60.	720260.	4345850.	235	12
61.	726080.	4344740.	235	14
62.	724070.	4344439.	235	11
63.	724440.	4335349.	247	14
64.	719780.	4339310.	252	11
65.	720400.	4339230.	252	11
66.	721559.	4336510.	254	11
67.	719170.	4337631.	255	11
68.	719020.	4336070.	256	11
69.	715070.	4339390.	258	14
70.	715510.	4328621.	604	12
71.	716230.	4326510.	611	12
72.	714250.	4327490.	616	12
73.	715440.	4327710.	650	12
74.	715100.	4326809.	650	11
75.	700511.	4330809.	104	11
76.	701871.	4330139.	104	13
77.	703400.	4329320.	104	13
78.	705000.	4327909.	104	13
79.	706311.	4327550.	104	13
80.	707560.	4322721.	644	11
81.	707541.	4322180.	644	11
82.	707080.	4322130.	644	11
83.	707410.	4321800.	644	11
84.	707940.	4321739.	644	11
85.	706521.	4319679.	702	11
86.	706030.	4319529.	702	12
87.	706390.	4319239.	702	11
88.	706150.	4318781.	702	11
89.	705000.	4318710.	702	11
90.	706139.	4318470.	702	11
91.	704940.	4318320.	702	11
92.	706190.	4317460.	702	15
93.	706260.	4317429.	702	15
94.	725540.	4331160.	46	21
95.	722850.	4331000.	47	14
96.	719900.	4334549.	49	11
97.	721050.	4334500.	49	11
98.	722931.	4336110.	53	17
99.	712800.	4343690.	60	11
100.	716940.	4343480.	60	12
101.	715690.	4336121.	69	11
102.	714660.	4337240.	70	11
103.	714180.	4336209.	71	11
104.	713320.	4337971.	73	21
105.	711819.	4336389.	79	11
106.	716689.	4341529.	80	12
107.	715140.	4340010.	80	11
108.	714340.	4340149.	80	11
109.	709000.	4341930.	83	11
110.	709369.	4340479.	83	11
111.	711200.	4334410.	86	11
112.	711000.	4332640.	92	12
113.	709940.	4332300.	92	11
114.	708030.	4332990.	96	11
115.	708930.	4335669.	100	11
116.	710930.	4329910.	103	11
117.	709760.	4329521.	103	11
118.	723631.	4338499.	108	11
119.	711611.	4346539.	217	12
120.	714750.	4350079.	220	11

	UTM East	UTM North	CENS	LU
21.	713570.	4346720.	200	11
22.	719610.	4347201.	227	11
23.	722631.	4345259.	232	11
24.	721960.	4344000.	232	11
25.	719750.	4342720.	232	11
26.	726041.	4341700.	240	11
27.	727900.	4336090.	246	12
28.	735190.	4340009.	405	11
29.	734140.	4339351.	405	11
30.	733739.	4337330.	405	17
31.	717260.	4336500.	503	12
32.	717081.	4330350.	503	11
33.	717140.	4329310.	505	12
34.	716001.	4328001.	505	11
35.	715891.	4328670.	605	11
36.	716140.	4328301.	606	11
37.	716030.	4326240.	606	11
38.	715370.	4328100.	607	12
39.	715929.	4327641.	609	11
40.	716100.	4327140.	609	11
41.	713230.	4329630.	638	11
42.	713300.	4329190.	630	11
43.	713660.	4328070.	638	11
44.	713161.	4328000.	638	11
45.	711460.	4329710.	639	11
46.	711540.	4328801.	639	11
47.	710770.	4328000.	639	13
48.	710630.	4327590.	639	11
49.	706000.	4326520.	639	11
50.	708571.	4326489.	640	11
51.	708651.	4325769.	640	11
52.	709770.	4325660.	640	11
53.	709331.	4325640.	640	11
54.	710021.	4325091.	640	11
55.	707120.	4321729.	643	12
56.	707190.	4321300.	643	12
57.	707370.	4320970.	643	11
58.	706750.	4320499.	643	11
59.	709900.	4324061.	646	11
60.	710360.	4323859.	646	11
61.	710530.	4323220.	646	11
62.	711199.	4323121.	646	11
63.	710030.	4322661.	646	11
64.	711000.	4322380.	646	11
65.	711220.	4325091.	647	11
66.	711800.	4325010.	647	14
67.	712340.	4324950.	647	17
68.	711970.	4324650.	647	17
69.	710779.	4324391.	647	11
70.	710250.	4324311.	647	11
71.	710960.	4324119.	647	11
72.	711520.	4324029.	647	11
73.	711930.	4323469.	647	11
74.	714571.	4325560.	651	11
75.	705399.	4322399.	701	12
76.	704070.	4322339.	701	12
77.	706020.	4322170.	701	12
78.	704560.	4321579.	701	12
79.	706350.	4320980.	701	11
80.	702790.	4320641.	701	11
81.	706051.	4320451.	701	11
82.	722070.	4320120.	701	14
83.	706400.	4320070.	701	11
84.	704359.	4320040.	701	14
85.	704620.	4319780.	701	11
86.	703351.	4319681.	701	12
87.	705700.	4319660.	701	11
88.	704000.	4319360.	701	11
89.	704741.	4319110.	701	11
90.	704090.	4318690.	701	12
91.	726370.	4330140.	46	12
92.	707311.	4331830.	99	11
93.	699030.	4332431.	106	11
94.	713480.	4343039.	111	11
95.	699110.	4339620.	204	11
96.	694360.	4336069.	204	12
97.	697840.	4335710.	204	11
98.	707450.	4330420.	208	11
99.	706760.	4337969.	208	11
100.	704569.	4337700.	210	11
101.	704069.	4336329.	210	11

	UTM East	UTM North	CLNS	LU		UTM East	UTM North	CLNS	LU
12.	704430.	4336130.	210	11	93.	710620.	4318800.	655	11
13.	706615.	4339160.	211	12	95.	707860.	4320630.	656	11
14.	699930.	4336550.	211	17	96.	681391.	4326660.	865	11
15.	701991.	4335891.	211	12	97.	681430.	4325191.	865	12
16.	702530.	4335479.	211	11	98.	680030.	4324410.	865	11
17.	703420.	4334970.	212	11	01.	722451.	4326680.	45	11
18.	704190.	4333380.	212	17	02.	692430.	4351020.	201	21
19.	705570.	4332800.	212	11	03.	690980.	4339531.	202	21
20.	703720.	4332460.	213	11	04.	697460.	4335530.	204	21
21.	704339.	4331089.	213	11	05.	701120.	4341210.	206	17
22.	703870.	4331191.	213	11	06.	728399.	4344921.	244	12
23.	710579.	4342351.	219	11	07.	727771.	4339069.	244	11
24.	715370.	4345912.	221	11	08.	726590.	4332350.	249	11
25.	714510.	4344500.	221	11	09.	685250.	4328509.	803	21
26.	719950.	4352429.	223	12	10.	687360.	4332609.	804	14
27.	719229.	4352201.	223	14	11.	727700.	4384720.	331	21
28.	717640.	4349660.	224	12	12.	737041.	4361780.	305	11
29.	717651.	4349021.	225	17	13.	730609.	4379680.	306	11
30.	716930.	4347590.	225	11	14.	729160.	4376360.	307	11
31.	717160.	4345621.	226	11	15.	732740.	4374301.	307	11
32.	718200.	4345280.	226	11	16.	733690.	4374170.	307	11
33.	717970.	4343929.	226	11	17.	741200.	4367569.	313	12
34.	724040.	4351259.	230	13	18.	732691.	4367991.	317	21
35.	721570.	4350390.	230	13	19.	730920.	4363589.	319	21
36.	723719.	4349820.	230	11	20.	734370.	4354220.	320	11
37.	724140.	4346571.	230	11	21.	736150.	4353121.	320	11
38.	722250.	4342640.	233	11	22.	734790.	4364470.	321	21
39.	723660.	4341390.	233	11	23.	741840.	4359121.	322	11
40.	721840.	4340640.	233	11	24.	744409.	4355941.	322	11
41.	727880.	4348181.	239	11	25.	741250.	4355050.	322	11
42.	729520.	4347261.	239	11	26.	744809.	4352890.	322	11
43.	727210.	4347230.	239	11	27.	739839.	4351501.	322	22
44.	726570.	4343989.	240	11	28.	750070.	4359720.	323	11
45.	727151.	4342291.	241	12	29.	741510.	4346341.	402	11
46.	728120.	4340620.	241	11	30.	744490.	4345209.	402	11
47.	726260.	4340380.	241	11	31.	747610.	4344719.	402	11
48.	725699.	4339120.	242	11	32.	741910.	4343090.	402	11
49.	725780.	4338241.	242	11	33.	738760.	4348940.	403	11
50.	731261.	4352309.	243	12	34.	735560.	4346130.	404	11
51.	731400.	4345690.	243	11	35.	735680.	4345151.	404	11
52.	732040.	4337879.	245	11	36.	738060.	4341730.	404	11
53.	728430.	4384670.	301	11	37.	735790.	4341419.	404	11
54.	732370.	4382150.	303	21	38.	739800.	4339759.	406	11
55.	730530.	4381020.	304	12	39.	746960.	4340120.	408	11
56.	740541.	4370000.	314	11	40.	747170.	4334291.	408	11
57.	732960.	4355350.	320	21	41.	744050.	4333801.	408	12
58.	735810.	4354870.	320	11	42.	740459.	4325770.	411	11
59.	737020.	4341229.	407	12	43.	739829.	4324579.	411	11
60.	738360.	4340621.	407	11	44.	736260.	4337729.	413	14
61.	737331.	4340479.	407	11	45.	736549.	4332300.	413	11
62.	740981.	4339950.	407	11	46.	737220.	4331830.	413	11
63.	734539.	4326940.	412	11	47.	737260.	4330450.	413	11
64.	734269.	4332930.	414	11	48.	735330.	4328200.	413	11
65.	732650.	4327999.	414	12	49.	733320.	4326121.	415	12
66.	726110.	4330450.	513	11	50.	736690.	4325471.	415	17
67.	726930.	4329900.	513	11	51.	738191.	4325129.	415	11
68.	718460.	4330800.	522	11	52.	733919.	4320540.	415	14
69.	718131.	4330210.	522	11	53.	738090.	4319210.	415	11
70.	719730.	4329071.	523	11	54.	734209.	4318880.	415	14
71.	720581.	4328239.	523	11	55.	740150.	4318150.	416	11
72.	720380.	4327941.	523	11	56.	735470.	4317919.	416	11
73.	717499.	4329150.	524	12	57.	735959.	4314600.	416	11
74.	718490.	4328671.	524	11	58.	738460.	4313780.	416	11
75.	719070.	4327411.	524	11	59.	742200.	4321481.	417	11
76.	717540.	4327890.	525	11	60.	745771.	4314239.	417	11
77.	718090.	4327380.	525	11	61.	738990.	4313280.	417	11
78.	720320.	4325859.	528	11	62.	743420.	4311249.	417	11
79.	719240.	4325659.	528	11	63.	739841.	4308539.	417	11
80.	720550.	4324840.	529	11	64.	751620.	4316671.	418	12
81.	720830.	4323829.	529	11	65.	716670.	4326080.	526	14
82.	722379.	4322280.	529	11	66.	719520.	4322581.	530	11
83.	716500.	4324900.	613	11	67.	719770.	4322369.	530	11
84.	715511.	4324311.	613	12	68.	723270.	4317510.	531	11
85.	708650.	4325180.	641	11	69.	712900.	4314681.	636	11
86.	707320.	4325170.	641	11	70.	713131.	4312950.	636	11
87.	712471.	4325880.	648	11	71.	711130.	4310089.	636	11
88.	713580.	4325749.	652	11	72.	714610.	4309931.	636	12
89.	713250.	4324810.	652	11	73.	713390.	4309610.	636	11
90.	713751.	4323610.	652	11	74.	710980.	4308020.	636	11
91.	713100.	4321460.	655	11	75.	707250.	4323050.	642	21
92.	709980.	4320380.	655	11	76.	708721.	4321980.	645	13

	UTM East	UTM North	CLNS	LU
77.	708720.	4320370.	645	11
78.	716080.	4322430.	653	11
79.	715870.	4321760.	653	11
80.	716700.	4320940.	653	11
81.	716650.	4318779.	653	11
82.	715950.	4316319.	653	11
83.	716330.	4320620.	654	21
84.	716050.	4316390.	656	11
85.	716730.	4315710.	658	11
86.	714570.	4315550.	658	11
87.	716621.	4314940.	656	11
88.	717650.	4313980.	658	11
89.	704740.	4323619.	703	15
90.	705871.	4323590.	703	11
91.	703370.	4319640.	703	12
92.	704440.	4317790.	703	11
01.	738480.	4379321.	308	21
02.	737270.	4376861.	308	21
03.	740800.	4376040.	308	21
04.	739450.	4375249.	308	21
05.	744400.	4374380.	308	21
06.	741640.	4384859.	309	21
07.	738270.	4384670.	309	21
08.	743381.	4382969.	309	21
09.	743920.	4381220.	309	21
10.	749460.	4384500.	310	11
11.	754130.	4384310.	310	21
12.	754600.	4380530.	310	21
13.	746830.	4375420.	310	21
14.	746519.	4375159.	310	11
15.	755570.	4374449.	311	21
16.	753760.	4371080.	311	21
17.	754259.	4367780.	311	21
18.	751360.	4366170.	311	21
19.	744899.	4370050.	312	21
20.	747190.	4369319.	312	21
21.	743140.	4367019.	312	21
22.	746691.	4366350.	312	21
23.	742050.	4365300.	312	21
24.	737460.	4370110.	316	21
25.	731041.	4369491.	316	21
26.	734410.	4369490.	316	21
27.	733069.	4366230.	316	21
28.	732359.	4365390.	316	21
29.	755190.	4359130.	324	21
30.	754220.	4358351.	324	21
31.	751969.	4357920.	324	21
32.	746380.	4353999.	324	21
33.	755860.	4353211.	324	21
34.	751141.	4351980.	324	21
35.	755920.	4350371.	324	21
36.	755020.	4339089.	401	21
37.	754670.	4334300.	401	21
38.	754030.	4327190.	409	21
39.	753130.	4324499.	409	21
40.	747270.	4314190.	419	21
41.	753470.	4313591.	419	21
42.	750860.	4306059.	420	21

	UTM East	UTM North	CLNS	LU
43.	749020.	4305660.	420	21
44.	753870.	4302799.	420	21
45.	744800.	4301790.	420	21
46.	732880.	4315500.	520	17
47.	731430.	4314630.	520	21
48.	727560.	4307220.	520	17
49.	726821.	4307140.	520	17
50.	723331.	4305979.	520	21
51.	731430.	4305831.	520	11
52.	736779.	4305340.	520	21
53.	734260.	4305260.	520	21
54.	724611.	4305231.	520	11
55.	715049.	4309949.	637	11
56.	721250.	4309111.	637	11
57.	717410.	4306919.	637	21
58.	721130.	4306321.	637	11
59.	714189.	4305860.	637	21
60.	717239.	4304940.	637	11
61.	729920.	4304940.	637	11
62.	710730.	4304040.	637	21
63.	713770.	4302700.	637	11
64.	713770.	4303639.	637	11
65.	711890.	4300411.	637	21
66.	716110.	4298689.	637	11
67.	717860.	4318219.	659	21
68.	718201.	4318130.	659	21
69.	719750.	4314621.	659	11
70.	718459.	4313529.	659	11
71.	717530.	4312180.	659	21
72.	692980.	4351451.	203	21
73.	697910.	4351310.	203	21
74.	693511.	4350140.	203	21
75.	699630.	4349909.	203	21
76.	703990.	4311190.	706	21
77.	701510.	4307220.	706	21
78.	700150.	4306900.	706	21
79.	701240.	4301390.	706	21
80.	699510.	4300210.	706	11
81.	671660.	4342219.	801	21
82.	667449.	4341940.	801	21
83.	677959.	4341179.	801	21
84.	684820.	4341160.	801	11
85.	680690.	4339861.	801	21
86.	674940.	4349591.	802	12
87.	680540.	4347560.	802	21
88.	678250.	4345510.	802	21
89.	684020.	4345430.	802	11
90.	682480.	4344960.	802	21
91.	677881.	4325201.	806	21
92.	676910.	4323969.	806	21
93.	672139.	4322020.	806	11
94.	676290.	4321880.	806	21
95.	667270.	4320939.	806	21
96.	665019.	4335591.	807	21
97.	672580.	4335000.	807	21
98.	676839.	4333790.	807	21
99.	677459.	4332750.	807	22
100.	664530.	4332370.	807	21

BUILDING INVENTORY WORKSHEET

ROOFS

44 Material: tar,¹ asphalt shingle,² wood,³ painted metal,⁴ bare galvanized,⁵ tile,⁶ slate,⁷ copper,⁸ other⁹ (), cannot identify¹⁰

45 Sloped¹ or flat²

46 51 Surface area (sq ft)

ROOF-MOUNTED APPARATUS

52 Vents, flues, and stacks: painted,¹ bare galvanized,² bare aluminum,³ other⁴ (), cannot identify⁵

53 54 Number of items

55 Skylights (framing): painted,¹ bare galvanized,² bare aluminum,³ other⁴ (), cannot identify⁵

56 57 Number of skylights

58 Flashing: painted,¹ bare galvanized,² bare aluminum,³ other⁴ (), cannot identify⁵

59 61 Area (sq ft)

CHIMNEYS

62 Material: painted,¹ brick,² stone,³ other⁴ (), cannot identify⁵

63 60 Exposed surface area (sq ft)

RAIN GUTTERS

67 Material: painted,¹ bare galvanized,² vinyl,³ copper,⁴ other⁵ (), cannot identify⁶

68 76 Length (ft)

DOWNSPOUTS

71 Material: painted,¹ bare galvanized,² vinyl,³ copper,⁴ other⁵ (), cannot identify⁶

72 74 Length (ft)

FENCES

75 Material: bare galvanized chain link,¹ bare galvanized stock,² painted,³ brick,⁴ concrete block,⁵ field stone,⁶ bare wood,⁷ other⁸ (), cannot identify⁹

76 78 Length (ft)

79 80 Height (ft)

1-4 Tract/MCD
5 Sampling frame
6-8 Sample point number
9-10 USGS land cover unit
11-12 Building type:

Residential
1 unit¹
2 units²
3-4 units³
5-9 units⁴
10-19 units⁵
20-49 units⁶
> 50 units⁷
Office⁸
Commercial⁹
Industrial¹⁰
Educational¹¹
Religious¹²
Health¹³
Farm¹⁴
Other ()¹⁵
Cannot identify¹⁶

Sketch of Building

_____ WINDOWS _____
 _____ WINDOWS ● _____
 _____ WINDOWS ● _____
 _____ WINDOWS ● _____

ESTIMATED QUANTITIES OF BUILDING MATERIALS

FIRST STORY
 ALL STORIES ABOVE 1st

	Wall area (%)		All stories above 1st
	Foundation	1st story	
Painted walls			
1. Wood (excl. stained)	_____	_____	_____
2. Steel	_____	_____	_____
3. Aluminum	_____	_____	_____
4. Masonry	_____	_____	_____
5. Concrete	_____	_____	_____
6. Stucco	_____	_____	_____
7. Other (_____)	_____	_____	_____
8. Cannot identify	_____	_____	_____
Bare walls			
9. Wood (incl. stained)	_____	_____	_____
10. Galvanized steel	_____	_____	_____
11. Concrete	_____	_____	_____
12. Brick	_____	_____	_____
13. Block	_____	_____	_____
14. Field stone	_____	_____	_____
15. Marble	_____	_____	_____
16. Limestone	_____	_____	_____
17. Granite	_____	_____	_____
18. Glass	_____	_____	_____
19. Vinyl	_____	_____	_____
20. Other (_____)	_____	_____	_____
21. Cannot identify	_____	_____	_____

Total 100 100 100

SPECIAL NOTES/SKETCH:

Age of building	_____
Height (ft)	_____
Side 1 (ft)	_____
Side 2 (ft)	_____
Lot size, side 1 (ft)	_____
Lot size, side 2 (ft)	_____
Exposed walls in footprint (ft)	_____
Photo ID	_____
Street address	_____

Procedures used to check the data

The data were checked several ways to ensure that the data base was correct. A major check of the material type percentages and the EWIF value was done before printing a frequency run of the entire data set.

The percentage check done was to sum the percentage of material types for the three stories of the building. We needed to ensure that the sum of all material types was 100%. Also, during the same computer run, we checked to see that every building had a foundation. (In some cases, the field team had not recorded a foundation.) For these cases, the photo with each building was examined to determine the material type of the foundation. We assumed 12 ft for the first story component of the building. In addition, during the same computer run, we would print out cases where the building height was greater than 14 ft (assuming 2 ft for the foundation and 12 ft for the first story) and there were no percentages recorded for the second and above stories.

The EWIF value was also checked against the lot size and the building side dimensions. A printout of these values was obtained for every building. We assumed that the building sides were the square root of the exposed roof area and would check to make sure that the EWIF was not larger than the building sides. There was also a check to ensure that the building was not larger than the lot size dimensions.

Several hand calculations were done for the building surface areas and compared against the computer-calculated surface areas. These values had to be consistent for different types of materials for a given building.

The frequency runs were checked for a number of items. The number of downspouts had to be the same as the number of rain gutters.

The empty footprints were noted for each sampling frame and verified against the number of buildings expected for each sampling frame.

The tally of land use and census tract numbers also had to be correct for each sampling frame.

The number of roof areas had to equal the number of buildings.

The number of cases had to be the same for a given accessory. For example, the number of material types and the surface area values had to be the same for the variables of roofs, fences, downspouts, rain gutters and roof-mounted apparatus. Although not every building had all these compon-

ents, if the value was recorded, then each material type had to have a corresponding surface area.

Strange or unexpected numbers for all the variables were always doublechecked against the building worksheets. For example, the EWIF values were always fairly even in value or divisible by 5. Any unusual numbers or large numbers were doublechecked, not only for the EWIF, but for the other variables as well.

APPENDIX B: PROGRAM LISTING FOR DETERMINING FOOTPRINT
SIZE FOR EACH SAMPLING FRAME

program FootSize (input, output);
 (Footsize is a simple program for calculating footprint size for other)
 (sampling frames based on some assumptions placed in the UCBD. The)
 (following assumption pertain to the UCBD :)
 (1. The sample size will be 107, allowing for empty footprints in 35% of)
 (the sampled locations.)
 (2. The alpha or proportionality coefficient, used to scale the remaining)
 (sampling frames will be set to ensure that 30% of the spacial area)
 (remains open in the UCBD)

const

size = 107;	{sample size in the UCBD}
frames = 6;	{* of sampling frames}
alpha = 0.026051;	{proportionality coefficient derived}
	{from the 30% open area in the UCBD}

{density coefficients by SFrame location...change these for each city}

dUCBD = 1.47e-5;
 dULIC = 5.6e-5;
 dUMFR = 6.9e-5;
 dUSFR = 0.447e-5;
 dNSUB = 2.7e-5;
 dNRUR = 0.1078e-5;

{*****}

var

footFt, footM : integer;	{footprint size in both Feet and Meters}
Alabel : str255;	{A labeler for the sampling frames}
i : integer;	{some counter variable OK?}

function density (frame : integer) : real;

{A simple function to return the density values to the main loop, it also}
 {sets a labeler to be used in the final output table.}

```

begin
  case frame of
    1 :
      begin
        density := dUCBD;
        Alabel := 'UCBD: ';
      end;
    2 :
      begin
        density := dULIC;
        Alabel := 'ULIC: ';
      end;
    3 :
      begin
        density := dUMFR;
        Alabel := 'UMFR: ';
      end;
    4 :
      begin
        density := dUSFR;
        Alabel := 'USFR: ';
      end;
    5 :
      begin
        density := dNSUB;
        Alabel := 'NSUB: ';
      end;
    6 :
      begin
        density := dNRUR;
        Alabel := 'NRUR: ';
      end;
    otherwise
      end; {Case frame of}
  end; {Adensity}

```

```

begin {main}
  {Label the simple table and calculate the footprint sizes, first in feet}
  {and then in meters. Print back out the label,density, and footprint}
  {sizes on the current textport window}

```

```

writeln('    DENSITY    < FOOT>');
showText;

for i := 1 to frames do
begin
  if density(i) > 0 then (check first to see if density > 0)
  begin
    footFt := round(sqrt(alpha * size / density(i)));
    footM := round(sqrt((alpha * size / density(i)) / 10.76));
    writeln(Alabel, density(i) : 5, footFt : 5, 'ft', footM : 5, 'm');

  end
  else
    writeln(Alabel, 'undef    undef undef ');
  end;
end.

```

	DENSITY	< FOOT>	
UCBD:	1.5e-5	435ft	133m
ULIC:	5.6e-5	223ft	68m
UMFR:	6.9e-5	201ft	61m
USFR:	4.5e-6	790ft	241m
NSUB:	2.7e-5	321ft	98m
NRUR:	1.1e-6	1608ft	490m

APPENDIX C. RESULTS OF THE FREQUENCY ANALYSIS

Description of the variables

<u>Variable name</u>	<u>Brief description</u>	<u>Detailed description</u>
LU	Land use	U.S. Geological Survey land use classification, where: 11 = residential, 12 = commercial and services, 13 = industrial, 14 = transportation, communications and utilities, 15 = industrial and commercial complexes, 16 = mixed urban or builtup land, 17 = other urban and or builtup land, 21 = cropland and pasture, 22 = orchards, groves, vineyards, nurseries and ornamental agricultural areas, 23 = confined feeding operations, 24 = other agricultural land, 31 = herbaceous rangeland, 32 = shrub and brush rangeland, 33 = mixed rangeland, 41 = deciduous forestland, 42 = evergreen forestland, 43 = mixed forestland, 51 = streams and canals, 52 = lakes, 53 = reservoirs, 54 = bays and estuaries, 61 = forested wetland, 62 = nonforested wetland, 71 = dry salt flats, 72 = beaches, 73 = sandy areas other than beaches, 74 = bare exposed rock, 75 = strip mines, quarries and gravel pits, 76 = transitional areas, 77 = mixed barren land.
SFRAME	Sampling frame	Sampling frame, see Figure 2, where: <div style="margin-left: 40px;"> 1 = UCBD 2 = ULIC 3 = UMFR 4 = USFR 5 = NSUB 6 = NRUR </div>
SPOINT	Sample point number	Sampling point number within sampling frame.
TRACT	Census tract	Census tract number, see Figure 4.
POP	Tract population	Total population in census tract.
DU	Total dwelling units in tract	Total number of housing units in census tract.
U1	One-unit structures in tract	Number of dwelling units in one-unit structures in census tract.
ABR	Area of built residential	Land area of census tract in built residential (millions of ft ²).
ABNR	Area of built nonresidential	Land area of census tract in built nonresidential (millions of ft ²).
AOB	Area of open land with buildings	Land area of census tract in open land with buildings (millions of ft ²).

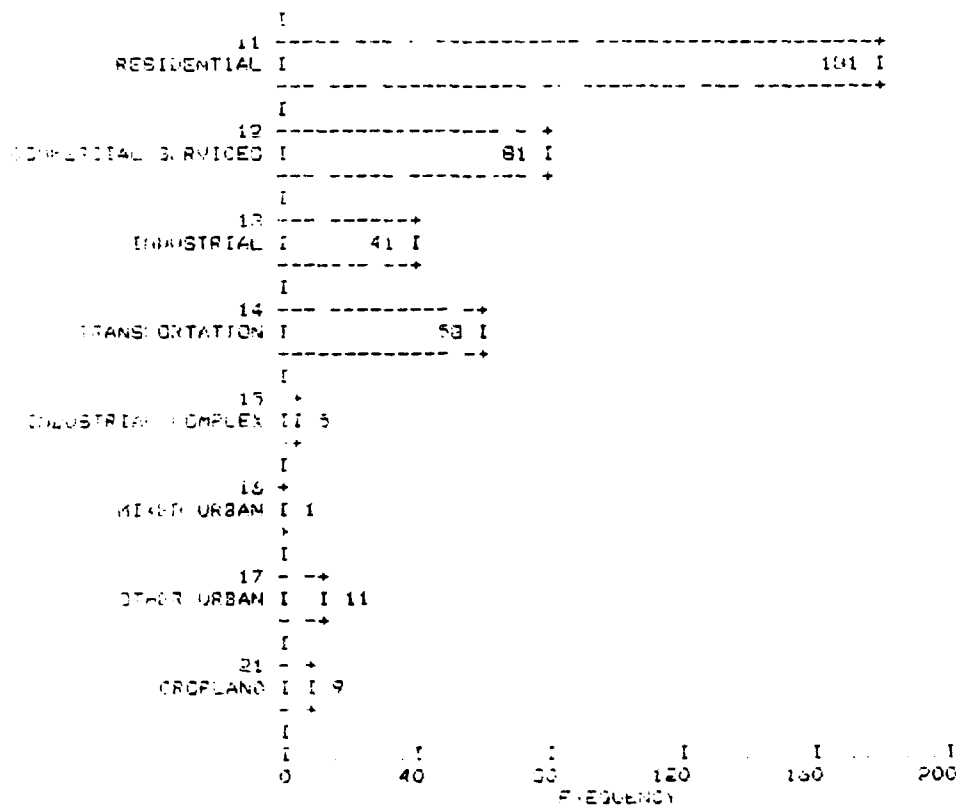
A0	Area of open land without buildings	Land area of census tract in open land with buildings (millions of ft^2).
AGE	Approx. age of structure	Approximate age of the building. 1900 is the base year (year 0). To obtain age, add the value to 1900. Ages less than 1900 are coded as negative values.
EWIF	Exposed wall in footprint	Exposed walls within a given footprint (ft).
HT	Average wall height	Average building height (ft).
LOT1	Lot size, side one	Lot size of one side associated with sampling point (ft).
LOT2	Lot size, side two	Lot size of the other side associated with sampling point (ft).
NBUILD	Number of buildings in footprint	The total number of buildings within the footprint.
SIDE1	Side one of building	Dimensions of one side of the building (ft).
SIDE2	Side two of building	Dimensions of the other side of the building (ft).
TYPE	Structure type-usage	Value label assigned to structure, where: 0 = no building, 1 = 1 housing unit, 2 = 2 housing units, 3 = 3 to 4 housing units, 4 = 5 to 9 housing units, 5 = 10 to 19 housing units, 6 = 20 to 49 housing units, 7 = 50 or more housing units, 8 = office buildings, 9 = commercial buildings, 10 = industrial buildings, 11 = educational building, 12 = religious building, 13 = health related buildings, 14 = farm, 15 = other buildings, 16 = cannot identify building.
APAIN	Area of painted surface	The total surface area of the building containing painted materials (ft^2).
AMORT	Area of mortar-masonry surface	The total surface area of the building containing mortar and masonry materials (ft^2).
ASTONE	Area of stone surface	The total surface area of the building containing stone materials (ft^2).
AGALV	Area of galvanized surface	The total surface area of the building containing galvanized material (ft^2).
AOTHER	Area of other materials	The total surface area of the building containing all other materials (ft^2).
CAREA	Exposed chimney area	Exposed surface area of chimney above roof (ft^2).
CMAT	Chimney material	Chimney material type, where: 0 = no chimney observed, 1 = painted, 2 = brick, 3 = stone, 4 = other chimney material, and 9 = cannot identify chimney material.

ESAREA	Area of exposed roof	Exposed roof area of building (ft ²).
ERMAT	Roof material type	Exposed roof material, where: 0 = no roof observed, 1 = tar, 2 = asphalt shingle, 3 = wood, 4 = painted metal, 5 = bare galvanized, 6 = tile, 7 = slate, 8 = copper, 9 = other roof material, and 10 = cannot identify roof material.
SLOPE	Roof slope	Roof configuration: 0 = no roof observed, 1 = sloped, 2 = flat.
ITEM1	No. of vents, flues, stacks	Number of items of roof-mounted apparatus.
RMAT	Roof apparatus material	Material type of roof-mounted apparatus, where: 0 = no roof apparatus material, 1 = painted, 2 = bare galvanized, 3 = bare aluminum, 4 = other roof-mounted apparatus material, and 9 = cannot identify roof-mounted apparatus material.
ITEM2	Skylights	Number of skylights.
SKYM	Skylight material	Framing material type of skylights where: 0 = no framing material of skylights observed, 1 = painted, 2 = bare galvanized, 3 = bare aluminum, 4 = other material types, and 9 = cannot identify material type.
FLMAT	Flashing material	Flashing material type, where: 0 = no flashing material observed, 1 = painted, 2 = bare galvanized, 3 = bare aluminum, 4 = other flashing material, and 9 = cannot identify flashing material.
FLAREA	Flashing area	Flashing surface area (ft ²).
RGMAT	Rain gutter material	Rain gutter material type, where: 0 = no rain gutters observed, 1 = painted, 2 = bare galvanized, 3 = vinyl, 4 = copper, 5 = other rain gutter material, and 9 = cannot identify rain gutter material.
RGLENGTH	Rain gutter length	Total length of rain gutters (ft).
DSPOUT	Material of downspout	Material type of downspouts, where: 0 = no downspout observed, 1 = painted, 2 = bare galvanized, 3 = vinyl, 4 = copper, 5 = other downspout material, and 9 = cannot identify downspout material.
DSLENG	Downspout length	Length of downspout (ft).
FENCE	Fence type	Material type of fences, where: 0 = no fences observed, 1 = bare galvanized chain link, 2 = bare galvanized stock, 3 = painted fence, 4 = brick, 5 = concrete block, 6 = field stone, 7 = bare wood, 8 = other fence material, and 9 = cannot identify fence material.
FAREA	Fence area	Area of fence (ft ³).

Major classification variables

LAND USE DESIGNATION

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
RESIDENTIAL	11	181	46.8	46.8	46.8
COMMERCIAL SERVICES	12	81	20.9	20.9	67.7
INDUSTRIAL	13	41	10.6	10.6	78.3
TRANSPORTATION	14	58	15.0	15.0	93.3
INDUSTRIAL COMPLEX	15	5	1.3	1.3	94.6
MIXED URBAN	16	1	.3	.3	94.9
OTHER URBAN	17	11	2.8	2.8	97.7
CROPLAND	21	9	2.3	2.3	100.0
TOTAL		387	100.0	100.0	



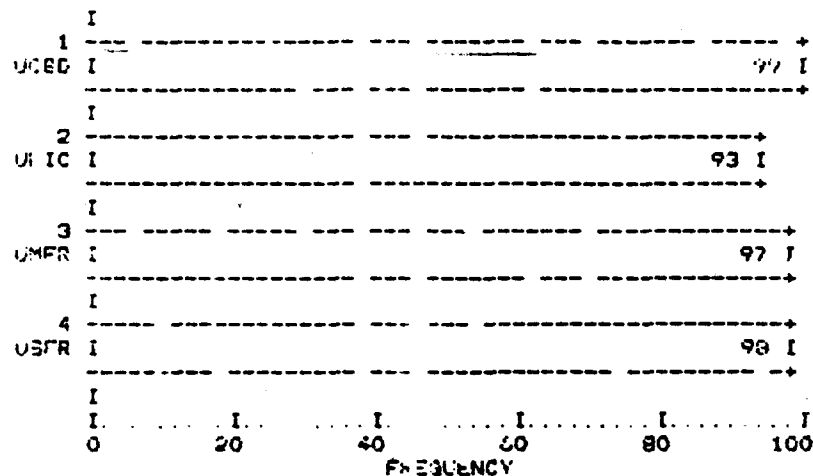
MEAN	12.339	STD. ERR.	.099	MEDIAN	12.000
MODE	11.000	STD. DEV.	1.955	VARIANCE	3.820
VARIANCE	7.309	S.E. KURT	1.995	SKEWNESS	2.423
STD. ERROR	1.24	RANGE	10.000	MINIMUM	11.000
MAXIMUM	21.000	SUM	4775.000		

PERCENTILE	VALUE	PERCENTILE	VALUE	PERCENTILE	VALUE
10.00	11.000	25.00	11.000	33.30	11.000
50.00	12.000	66.70	12.000	75.00	13.000
90.00	14.000				

ALL CASES 387 MISSING CASES 0

5. PART SAMPLING FRAME

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
1.00	1	99	25.6	25.6	25.6
2.00	2	93	24.0	24.0	49.6
3.00	3	97	25.1	25.1	74.7
4.00	4	98	25.3	25.3	100.0
	TOTAL	387	100.0	100.0	



MEAN	2.501	STD ERR	.097	MEDIAN	3.000
MODE	1.000	STD DEV	1.128	VARIANCE	1.271
MEANST	-1.381	S E KURT	1.995	SKEWNESS	-.009
S E MEAN	.124	RANGE	3.000	MINIMUM	1.000
MAXIMUM	4.000	SUM	968.000		

PERCENTILE	VALUE	PERCENTILE	VALUE	PERCENTILE	VALUE
10.00	1.000	25.00	1.000	33.30	2.000
50.00	3.000	56.70	3.000	75.00	4.000
90.00	4.000				

VALID CASES 387 MISSING CASES 0

SPDINT SAMPLE POINT NUMBER

VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT
1	4	1	1	34	4	1	35	67	4	1	67
2	4	1	2	35	4	1	36	68	4	1	70
3	4	1	3	36	4	1	37	69	4	1	71
4	4	1	4	37	4	1	38	70	4	1	72
5	4	1	5	38	4	1	39	71	4	1	73
6	4	1	6	39	4	1	40	72	4	1	74
7	4	1	7	40	4	1	41	73	4	1	75
8	4	1	8	41	4	1	42	74	4	1	76
9	4	1	9	42	4	1	43	75	4	1	78
10	4	1	10	43	4	1	44	76	4	1	79
11	4	1	11	44	4	1	45	77	4	1	80
12	4	1	12	45	4	1	47	78	4	1	81
13	4	1	13	46	4	1	48	79	4	1	82
14	4	1	14	47	4	1	49	80	4	1	83
15	4	1	15	48	4	1	50	81	4	1	84
16	4	1	16	49	4	1	51	82	4	1	85
17	4	1	17	50	4	1	52	83	4	1	86

19	4	1	19	51	4	1	53	84	4	1	87
20	4	1	20	52	4	1	54	85	4	1	88
21	4	1	21	53	4	1	55	86	4	1	89
22	4	1	22	54	4	1	56	87	4	1	90
23	4	1	23	55	4	1	57	88	4	1	91
24	4	1	24	56	4	1	58	89	4	1	92
25	4	1	25	57	4	1	59	90	4	1	93
26	4	1	26	58	4	1	60	91	4	1	94
27	4	1	27	59	4	1	61	92	4	1	95
28	4	1	28	60	4	1	62	93	4	1	96
29	4	1	29	61	4	1	63	94	3	1	97
30	4	1	30	62	4	1	64	95	3	1	98
31	4	1	31	63	4	1	65	96	3	1	99
32	4	1	32	64	4	1	66	97	3	1	100
33	4	1	33	65	4	1	67	98	2	1	100
34	4	1	34	66	4	1	68	99	1	0	100

COUNT MIDPOINT ONE SYMBOL EQUALS APPROXIMATELY 40 OCCURRENCES

3	0	*****
9	5	*****
10	10	*****
15	15	*****
20	20	*****
25	25	*****
30	30	*****
35	35	*****
40	40	*****
45	45	*****
50	50	*****
55	55	*****
60	60	*****
65	65	*****
70	70	*****
75	75	*****
80	80	*****
85	85	*****
90	90	*****
95	95	*****
100	100	*****

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0 4 8 12 16 20
HISTOGRAM FREQUENCY

MEAN	48.902	STD ERR	1.424	MEDIAN	49.000
SD	1.000	STD DEV	28.010	VARIANCE	704.550
MEAN	-1.193	S & KURT	1.995	SKEWNESS	.006
MIN	.124	RANGE	98.000	MINIMUM	1.000
MAXIMUM	99.000	SUM	18725.000		

PERCENTILE	VALUE	PERCENTILE	VALUE	PERCENTILE	VALUE
10.00	10.000	25.00	25.000	33.30	33.000
50.00	49.000	66.70	65.000	75.00	73.000
90.00	98.000				

VALID CASES 387 MISSING CASES 0

W-CT CENSUS TRACT

W-CT	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT
2042	3	1	43	3011	1	0	87				
2062	2	1	44	3030	1	0	87				
2102	1	0	44	3040	1	0	88				
2103	2	1	45	3140	1	0	88				
2110	4	1	46	3201	2	1	89				
2121	2	1	46	4050	3	1	89				
2122	1	0	47	4070	4	1	90				
2130	1	0	47	4120	1	0	91				
2131	1	0	47	4140	2	1	91				
2132	1	0	47	5030	2	1	92				
2170	1	0	48	5050	2	1	92				
2190	1	0	48	5130	2	1	93				
2200	2	1	48	5220	2	1	93				
2211	1	0	49	5230	3	1	94				
2212	1	0	49	5240	3	1	95				
2231	4	1	50	5250	2	1	95				
2240	1	0	50	5280	2	1	96				
2250	2	1	51	5290	3	1	96				
2260	3	1	51	6040	1	0	97				
2270	1	0	52	6050	1	0	97				
2290	1	0	52	6060	2	1	98				
2300	4	1	53	6070	1	0	98				
2301	7	2	55	6090	2	1	98				
2302	3	1	56	6110	1	0	99				
2310	5	1	57	6130	2	1	99				
2320	1	0	57	6160	1	0	99				
2321	4	1	58	6380	4	1	100				
2322	2	1	59	6390	5	1	100				
2330	3	1	59	6400	5	1	100				
2350	9	2	61	6410	2	1	100				
2390	3	1	62	6430	4	1	100				
2400	1	0	63	6440	5	1	100				
2401	1	0	63	6460	6	2	100				
2410	3	1	64	6470	7	2	100				
2420	2	1	64	6480	1	0	100				
2430	2	1	65	6500	2	1	100				
2450	1	0	65	6510	1	0	100				
2460	1	0	65	6520	3	1	100				
2470	1	0	65	6530	3	1	100				
2520	2	1	66	6560	1	0	100				
2542	1	0	66	7010	16	4	100				
2550	1	0	66	7020	7	2	100				
2560	1	0	67	8050	4	1	100				
2580	1	0	67								

COUNT FREQUENCY ONE SYMBOL EQUALS APPROXIMATELY 4 00 OCCURRENCES

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      700  25600 *****
      800  51200 *****
      900  102400 *****
      1000 204800 *****
      1100 409600 *****
      1200 819200 *****
      1300 1638400 *****
      1400 3276800 *****
      1500 6553600 *****
      1600 13107200 *****
      1700 26214400 *****
      1800 52428800 *****
      1900 104857600 *****
      2000 209715200 *****
      2100 419430400 *****
      2200 838860800 *****
      2300 1677721600 *****
      2400 3355443200 *****
      2500 6710886400 *****
      2600 13421772800 *****
      2700 26843545600 *****
      2800 53687091200 *****
      2900 107374182400 *****
      3000 214748364800 *****
      3100 429496729600 *****
      3200 858993459200 *****
      3300 1717986918400 *****
      3400 3435973836800 *****
      3500 6871947673600 *****
      3600 13743895347200 *****
      3700 27487790694400 *****
      3800 54975581388800 *****
      3900 109951162777600 *****
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40 50 100 150 200 250 300 350 400 450 500 550 600 650 700 750 800 850 900 950 1000

HISTOGRAM FREQUENCY

MIN	1000 000	STD DEV	131 514	MEDIAN	3240 000
Q1	1000 000	STD DEV	2387 000	VARIANCE	6653008 18
Q3	1000 000	Q3 - Q1	1 337	SKEWNESS	576
RANGE	1000 000	RANGE	8040 000	MINIMUM	10 000
CUM	1000 000	CUM	1 33720 00		

PERCENTILE	VALUE	PERCENTILE	VALUE	PERCENTILE	VALUE
10 00	1000 000	25 00	1000 000	50 00	1000 000
25 00	1000 000	50 00	1000 000	75 00	1000 000
50 00	1000 000				

MISSING DATA

Census tract information

TRACT POPULATION

TRACT	FREQ	PCT	CUM	VALUE	FREQ	PCT	CUM	VALUE	FREQ	PCT	CUM	VALUE
1000 00	17	17	3123 00		1	0	44	5145 00	2	1	72	
1000 00	13	5	32	3162 00	1	0	44	5235 00	2	1	72	
1000 00	1	0	22	3244 00	2	1	45	5259 00	1	0	73	
1000 00	15	4	26	3293 00	5	1	46	5302 00	1	0	73	
1000 00	1	0	26	3387 00	5	1	47	5323 00	4	1	74	
1000 00	1	0	26	3394 00	1	0	48	5342 00	3	1	75	
1000 00	5	1	25	3399 00	2	1	48	5358 00	1	0	75	
1000 00	1	0	28	3400 00	4	1	48	5369 00	1	0	75	
1000 00	1	0	28	3423 00	1	0	49	5376 00	1	0	75	
1000 00	1	0	28	3468 00	3	1	50	5439 00	2	1	75	
1000 00	1	0	29	3503 00	8	2	52	5525 00	3	1	77	
1000 00	2	1	29	3568 00	2	1	53	5560 00	1	0	77	
1000 00	7	1	31	3713 00	1	0	53	5574 00	3	1	78	
1000 00	1	0	31	3727 00	1	0	53	5572 00	1	0	78	
1000 00	1	0	32	3809 00	2	1	54	5588 00	1	0	78	
1000 00	7	1	32	3827 00	11	2	57	5672 00	2	1	79	
1000 00	2	1	32	3867 00	1	0	57	5672 00	3	1	80	
1000 00	1	0	32	3899 00	1	0	57	5672 00	1	0	80	
1000 00	1	0	33	4113 00	4	1	58	5672 00	1	0	80	
1000 00	1	0	33	4172 00	1	0	58	5672 00	3	1	81	
1000 00	1	0	33	4171 00	2	1	59	5672 00	1	0	81	
1000 00	4	1	34	4272 00	1	0	59	5676 00	2	1	82	
1000 00	1	0	34	4275 00	1	0	59	5714 00	15	4	85	

COUNT MIDPOINT ONE SYMBOL EQUALS APPROXIMATELY 4.00 OCCURRENCES

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HISTOGRAM FREQUENCY

MEAN	1608.527	SID ERP	131.504	MEDIAN	2240.000
SD	10.000	SID DEV	2587.055	VARIANCE	6693008.18
STDEV	11.191	S & KURT	1.991	SKEWNESS	576
RANGE	124	RANGE	8040.000	MINIMUM	10.000
SUM	1050.000	SUM	1050720.00		

PERCENTILE	VALUE	PERCENTILE	VALUE	PERCENTILE	VALUE
10.00	10.000	25.00	60.000	33.30	600.000
33.30	270.000	66.70	2273.820	75.00	5250.000
75.00	1500.000				
ALL CASES	337	MISSING CASES	0		

Census tract information

TRACT POPULATION											
VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT
3123.00	68	17	17	3145.00	2	1	72	3145.00	2	1	72
3162.00	19	5	22	3235.00	2	1	72	3235.00	2	1	72
3244.00	1	0	22	3259.00	3	1	73	3259.00	1	0	73
3293.00	15	4	26	3302.00	5	1	76	3302.00	1	0	73
3387.00	1	0	26	3303.00	5	1	77	3303.00	4	1	74
3394.00	1	0	26	3342.00	1	0	78	3342.00	3	1	75
3399.00	3	1	28	3378.00	1	0	78	3378.00	1	0	75
3400.00	1	0	28	3369.00	1	0	79	3369.00	1	0	75
3429.00	1	0	28	3396.00	1	0	79	3396.00	1	0	75
3488.00	1	0	28	3439.00	3	1	80	3439.00	2	1	76
3552.00	1	0	29	3529.00	8	2	82	3529.00	3	1	77
3668.00	2	1	29	3590.00	2	1	83	3590.00	1	0	77
3710.00	7	1	30	3747.00	1	0	83	3747.00	3	1	78
3727.00	1	0	30	3872.00	1	0	83	3872.00	1	0	78
3809.00	1	0	30	3888.00	2	1	84	3888.00	1	0	78
3827.00	5	1	32	4072.00	11	3	87	4072.00	2	1	79
3867.00	2	1	32	4116.00	1	0	87	4116.00	3	1	80
3999.00	1	0	32	4218.00	1	0	87	4218.00	1	0	80
4117.00	1	0	33	4372.00	4	1	88	4372.00	1	0	80
4172.00	1	0	33	4424.00	1	0	88	4424.00	3	1	81
4171.00	1	0	33	4472.00	2	1	89	4472.00	1	0	81
4292.00	4	1	34	4656.00	1	0	89	4656.00	2	1	82
4276.00	1	0	34	4714.00	1	0	89	4714.00	16	4	86

4370 00	2	1	35	4315 00	1	0	60	4755 00	7	2	33
4371 00	1	0	35	4320 00	1	1	60	4760 00	1	0	33
4372 00	1	0	35	4325 00	1	1	60	4765 00	3	1	39
4373 00	1	0	35	4330 00	2	1	61	4770 00	1	0	39
4374 00	2	1	35	4335 00	2	1	61	4775 00	3	1	40
4375 00	2	1	35	4340 00	2	1	61	4780 00	3	1	41
4376 00	2	1	35	4345 00	2	1	62	4785 00	1	0	41
4377 00	1	0	35	4350 00	2	2	64	4790 00	1	0	41
4378 00	1	0	35	4355 00	3	1	64	4795 00	4	1	42
4379 00	1	0	35	4360 00	1	1	65	4800 00	3	1	42
4380 00	1	0	35	4365 00	1	0	65	4805 00	3	1	42
4381 00	2	1	35	4370 00	2	1	65	4810 00	4	1	43
4382 00	2	1	40	4375 00	1	1	65	4815 00	2	1	43
4383 00	2	1	40	4380 00	2	1	65	4820 00	1	1	43
4384 00	2	1	41	4385 00	2	1	67	4825 00	0	0	43
4385 00	1	0	41	4390 00	1	1	67	4830 00	0	0	43
4386 00	1	0	41	4395 00	2	0	67	4835 00	0	1	43
4387 00	2	1	45	4400 00	2	1	68	4840 00	1	1	43
4388 00	2	1	45	4405 00	2	1	68	4845 00	1	1	43
4389 00	1	0	45	4410 00	2	1	68	4850 00	1	1	43

COUNT MIDPOINT ONE SYMBOL EQUALS APPROXIMATELY 2.00 OCCURRENCES

100	496	*****
10	1138	*****
7	1820	*****
32	2482	*****
41	3144	*****
15	3806	*****
7	4468	*****
41	5130	*****
14	5792	*****
5	6454	*****
16	7116	*****
16	7778	*****
1	8440	+
16	9102	*****
10	9764	*****
16	10426	+
10	11088	+
10	11750	+
2	12412	+
10	13074	+
1	13736	+

0 20 40 60 80 100
HISTOGRAM FREQUENCY

MEAN	7777.459	STD ERR	149.655	MEDIAN	2488.000
MODE	172.000	STD DEV	2941.245	VARIANCE	8668596.77
PERCENTILE	128	S.E. KURT	1.545	SKEWNESS	.679
S.E. MEAN	124	RANGE	13668.000	MINIMUM	172.000
PERCENTILE	4010.000	SUM	1461554.00		

PERCENTILE	VALUE	PERCENTILE	VALUE	PERCENTILE	VALUE
25.00	184.000	33.30	2214.000		
50.00	2408.000	75.00	5309.000		
75.00	7775.400				

MISSING CASES 0

TOTAL DWELLING UNITS IN TRACT

FREQ	SUM			VALUE	FREQ	SUM			VALUE	FREQ	SUM		
	PCT	PCT	PCT			PCT	PCT	PCT			PCT	PCT	PCT
122	17	17	17	1217 00	1	1	43	43	1422 00	9	2	71	71
1275	5	22	22	1275 00	4	1	44	44	1475 00	1	0	71	71
1231	0	22	22	1231 00	3	1	45	45	1427 00	4	1	72	72
1262	0	22	22	1262 00	2	2	47	47	1451 00	1	0	72	72
1301	0	22	22	1301 00	1	1	47	47	1456 00	1	0	72	72
1307	0	23	23	1307 00	1	0	47	47	1407 00	9	1	73	73
1311	4	27	27	1311 00	2	1	48	48	1408 00	5	1	74	74
1355	0	27	27	1355 00	1	0	48	48	1422 00	2	1	75	75
1361	1	27	27	1361 00	5	1	46	46	1432 00	1	0	75	75
1374	1	29	29	1374 00	5	1	50	50	1431 00	6	2	77	77
1431	0	29	29	1431 00	2	1	51	51	1442 00	9	1	77	77
1405	0	29	29	1405 00	5	1	52	52	1451 00	1	0	78	78
1415	1	30	30	1415 00	1	0	52	52	1459 00	3	1	78	78
1409	1	31	31	1409 00	1	0	53	53	1496 00	1	0	79	79
1454	1	32	32	1454 00	1	0	53	53	1456 00	2	1	79	79
1457	0	32	32	1457 00	4	1	54	54	1461 00	1	0	79	79
1459	0	32	32	1459 00	2	1	55	55	1474 00	0	1	80	80
1502	0	32	32	1502 00	2	1	55	55	1419 00	1	0	80	80
1512	0	32	32	1512 00	2	1	56	56	1474 00	15	4	84	84
1526	1	34	34	1526 00	2	1	56	56	1458 00	1	0	85	85
1535	1	34	34	1535 00	1	0	56	56	1490 00	1	0	85	85
1561	1	34	34	1561 00	1	0	57	57	1508 00	3	1	86	86
1574	1	35	35	1574 00	1	0	57	57	1556 00	4	1	87	87
1575	0	35	35	1575 00	1	0	57	57	1576 00	1	0	87	87
1612	1	35	35	1612 00	1	0	57	57	1589 00	1	0	87	87
1632	1	35	35	1632 00	1	0	58	58	1613 00	1	0	88	88
1635	0	36	36	1635 00	4	1	59	59	1714 00	2	2	90	90
1672	1	36	36	1672 00	2	1	59	59	1734 00	3	1	91	91
1716	1	37	37	1716 00	1	0	59	59	1758 00	2	1	91	91
1750	1	37	37	1750 00	1	0	60	60	1800 00	2	1	92	92
1757	0	37	37	1757 00	3	1	60	60	1812 00	4	1	93	93
1769	1	38	38	1769 00	11	3	63	63	1869 00	2	1	93	93
1807	1	39	39	1807 00	2	1	64	64	1808 00	3	1	94	94
1815	1	39	39	1815 00	1	0	64	64	1805 00	3	1	95	95
1901	1	40	40	1901 00	2	1	65	65	1847 00	3	2	97	97
1903	1	40	40	1903 00	9	1	65	65	1856 00	1	0	97	97
1934	1	41	41	1934 00	2	1	66	66	1852 00	1	0	97	97
1975	1	41	41	1975 00	2	1	66	66	1746 00	3	1	98	98
1933	1	42	42	1933 00	1	0	67	67	1757 00	9	1	99	99
1932	1	42	42	1932 00	3	1	67	67	1841 00	1	0	99	99
1976	1	43	43	1976 00	1	0	68	68	1805 00	9	1	99	99
1901	1	43	43	1901 00	3	1	68	68	1877 00	2	1	100	100

COUNT MIDPOINT ONE SYMBOL EQUALS APPROXIMATELY 1.50 OCCURRENCES

122	*****
355	*****
528	*****
621	*****
1054	*****
1287	*****
1520	*****
1753	*****
1986	*****
2219	*****
2452	*****
2685	*****
2918	*****
3151	*****
3384	*****
3617	*****
3850	*****
4083	*****
4316	*****
4549	*****
4782	*****

0 15 30 45 60 75
HISTOGRAM FREQUENCY

MEAN	1174 000	STD ERR	54 085	MEDIAN	1174 000
STD	5 010	STD DEV	1053 452	VARIANCE	1132028 86
VARIATION	1 073	S.E. MEAN	1 995	SKEWNESS	177
COEFF	124	RANGE	4891 000	MINIMUM	6 000
COEFF	11 7 000	SUM	514435 000		

PERCENTILE	VALUE	PERCENTILE	VALUE	PERCENTILE	VALUE
25 00	951 000	50 00	1174 000	75 00	1329 000
25 00	951 000	75 00	1329 000		

MISSING VALUES 0

UNIT STRUCTURES IN TRACT

UNIT	FREQ	PCT	CUM	VALUE	FREQ	PCT	CUM	VALUE	FREQ	PCT	CUM
580 00	1	0	25	580 00	1	0	44	1122 00	4	1	70
581 00	1	0	26	581 00	11	3	47	1131 00	2	1	71
590 00	1	0	27	590 00	1	0	47	1170 00	4	1	72
704 00	1	0	27	704 00	5	1	49	1174 00	1	0	72
705 00	1	0	27	705 00	2	1	49	1191 00	2	1	73
705 00	1	0	28	705 00	1	0	49	1273 00	9	2	75
716 00	4	1	28	716 00	3	1	50	1268 00	3	1	75
723 00	1	0	29	723 00	1	0	50	1269 00	2	1	76
725 00	1	0	29	725 00	1	0	51	1274 00	1	0	76
737 00	2	1	30	737 00	2	1	51	1294 00	2	1	77
738 00	1	0	30	738 00	5	1	52	1301 00	1	0	77
770 00	1	0	30	770 00	4	1	53	1330 00	9	2	79
774 00	2	1	31	774 00	1	0	54	1342 00	1	0	80
783 00	3	1	31	783 00	1	0	54	1343 00	2	1	80
822 00	1	0	32	822 00	1	0	54	1396 00	3	1	81
823 00	1	0	32	823 00	2	1	55	1420 00	1	0	81
830 00	1	0	32	830 00	1	0	55	1436 00	2	1	81
836 00	3	1	34	836 00	3	1	56	1475 00	1	0	82
851 00	2	1	34	851 00	2	1	56	1495 00	16	4	86
853 00	3	1	35	853 00	1	0	57	1613 00	1	0	86
857 00	1	0	35	857 00	1	0	57	1614 00	2	1	87
859 00	1	0	35	859 00	2	1	57	1620 00	1	0	87
869 00	1	0	36	869 00	1	0	58	1653 00	3	1	88
871 00	1	0	36	871 00	1	0	58	1709 00	1	0	88
879 00	1	0	36	879 00	1	0	58	1711 00	3	1	89
891 00	1	0	36	891 00	4	1	59	1734 00	3	1	89
894 00	5	1	38	894 00	1	0	59	1847 00	1	0	90
893 00	1	0	38	893 00	2	1	60	1866 00	3	1	90
930 00	2	1	39	930 00	2	1	60	2174 00	2	1	91
935 00	1	0	39	935 00	6	2	62	2226 00	4	1	92
951 00	1	0	39	951 00	1	0	62	2312 00	3	1	93
962 00	1	0	40	962 00	3	1	63	2364 00	1	0	93
963 00	1	0	40	963 00	5	1	64	2440 00	3	1	94
963 00	5	1	41	963 00	1	0	65	2506 00	3	1	95
1011 00	1	0	41	1011 00	5	1	66	2535 00	4	1	96
1013 00	2	1	42	1013 00	2	1	66	2705 00	2	1	96
1022 00	2	1	42	1022 00	1	0	67	2739 00	3	1	97
1029 00	2	1	43	1029 00	1	0	67	2784 00	3	2	99
1057 00	1	0	43	1057 00	1	0	67	2986 00	2	1	99
1078 00	1	0	43	1078 00	2	1	68	3524 00	2	1	100
1109 00	1	0	44	1109 00	2	1	68				
1115 00	1	0	44	1115 00	3	1	69				

COUNT MIDPOINT ONE SYMBOL EQUIV. APPROXIMATELY 1% OCCURRENCE

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      53 *****
      161 *****
      219 *****
      167 *****
      53 *****
      953 *****
      1081 *****
      1004 *****
      1027 *****
      1040 **
      1063 **
      1091 *
      1143 *
      1205 *
      1285 *
      1312 *
      1371 *
      1407 *
      1443 *
  
```

HISTOGRAM FREQUENCY

MEAN	1.100	STD DEV	.40000	MINIMUM	1.000
MODE	1.000	STD DEV	.74500	MAXIMUM	1.245
RANGE	.245	RANGE	1.245	MEAN	1.100
SUM	110	SUM	110.000	MEAN	1.100

PERCENTILE	1.000	PERCENTILE	1.000	PERCENTILE	1.000
1.00	1.000	25.00	1.000	75.00	1.100
1.00	1.000	50.00	1.100	100.00	1.245
1.00	1.000	75.00	1.100		
1.00	1.000	MISSING VALUES	0		

AREA BUILT RESIDENTIAL

VALUE	FREQ	PCT	CUM	VALUE	FREQ	PCT	CUM	VALUE	FREQ	PCT	CUM
1.03	1	0	43	1.15	2	1	43	1.15	2	1	43
1.09	1	0	43	1.20	1	0	43	1.20	1	0	43
1.09	1	0	43	1.24	1	0	43	1.24	1	0	43
1.09	2	1	44	1.28	2	1	44	1.28	2	1	44
1.09	2	1	44	1.32	3	1	44	1.32	3	1	44
1.09	2	1	44	1.36	3	1	44	1.36	3	1	44
1.13	1	0	44	1.40	3	1	44	1.40	3	1	44
1.13	2	1	45	1.44	3	1	44	1.44	3	1	44
1.13	3	1	45	1.48	3	1	44	1.48	3	1	44
1.14	3	1	46	1.52	3	1	44	1.52	3	1	44
1.14	3	1	46	1.56	3	1	44	1.56	3	1	44
1.15	1	0	46	1.60	1	0	44	1.60	1	0	44
1.15	2	1	47	1.64	1	0	44	1.64	1	0	44
1.15	2	1	47	1.68	1	0	44	1.68	1	0	44
1.17	1	0	47	1.72	2	1	47	1.72	2	1	47
1.17	2	1	47	1.76	2	1	47	1.76	2	1	47
1.17	2	1	47	1.80	1	0	47	1.80	1	0	47
1.19	3	1	48	1.84	1	0	47	1.84	1	0	47
1.19	3	1	48	1.88	1	0	47	1.88	1	0	47
1.23	5	1	49	1.92	1	0	47	1.92	1	0	47
1.23	5	1	49	1.96	1	0	47	1.96	1	0	47
1.23	5	1	49	2.00	1	0	47	2.00	1	0	47
1.23	5	1	49	2.04	1	0	47	2.04	1	0	47
1.23	5	1	49	2.08	1	0	47	2.08	1	0	47
1.23	5	1	49	2.12	1	0	47	2.12	1	0	47
1.23	5	1	49	2.16	1	0	47	2.16	1	0	47
1.23	5	1	49	2.20	1	0	47	2.20	1	0	47
1.23	5	1	49	2.24	1	0	47	2.24	1	0	47
1.23	5	1	49	2.28	1	0	47	2.28	1	0	47
1.23	5	1	49	2.32	1	0	47	2.32	1	0	47
1.23	5	1	49	2.36	1	0	47	2.36	1	0	47
1.23	5	1	49	2.40	1	0	47	2.40	1	0	47
1.23	5	1	49	2.44	1	0	47	2.44	1	0	47
1.23	5	1	49	2.48	1	0	47	2.48	1	0	47
1.23	5	1	49	2.52	1	0	47	2.52	1	0	47
1.23	5	1	49	2.56	1	0	47	2.56	1	0	47
1.23	5	1	49	2.60	1	0	47	2.60	1	0	47
1.23	5	1	49	2.64	1	0	47	2.64	1	0	47
1.23	5	1	49	2.68	1	0	47	2.68	1	0	47
1.23	5	1	49	2.72	1	0	47	2.72	1	0	47
1.23	5	1	49	2.76	1	0	47	2.76	1	0	47
1.23	5	1	49	2.80	1	0	47	2.80	1	0	47
1.23	5	1	49	2.84	1	0	47	2.84	1	0	47
1.23	5	1	49	2.88	1	0	47	2.88	1	0	47
1.23	5	1	49	2.92	1	0	47	2.92	1	0	47
1.23	5	1	49	2.96	1	0	47	2.96	1	0	47
1.23	5	1	49	3.00	1	0	47	3.00	1	0	47
1.23	5	1	49	3.04	1	0	47	3.04	1	0	47
1.23	5	1	49	3.08	1	0	47	3.08	1	0	47
1.23	5	1	49	3.12	1	0	47	3.12	1	0	47
1.23	5	1	49	3.16	1	0	47	3.16	1	0	47
1.23	5	1	49	3.20	1	0	47	3.20	1	0	47
1.23	5	1	49	3.24	1	0	47	3.24	1	0	47
1.23	5	1	49	3.28	1	0	47	3.28	1	0	47
1.23	5	1	49	3.32	1	0	47	3.32	1	0	47
1.23	5	1	49	3.36	1	0	47	3.36	1	0	47
1.23	5	1	49	3.40	1	0	47	3.40	1	0	47
1.23	5	1	49	3.44	1	0	47	3.44	1	0	47
1.23	5	1	49	3.48	1	0	47	3.48	1	0	47
1.23	5	1	49	3.52	1	0	47	3.52	1	0	47
1.23	5	1	49	3.56	1	0	47	3.56	1	0	47
1.23	5	1	49	3.60	1	0	47	3.60	1	0	47
1.23	5	1	49	3.64	1	0	47	3.64	1	0	47
1.23	5	1	49	3.68	1	0	47	3.68	1	0	47
1.23	5	1	49	3.72	1	0	47	3.72	1	0	47
1.23	5	1	49	3.76	1	0	47	3.76	1	0	47
1.23	5	1	49	3.80	1	0	47	3.80	1	0	47
1.23	5	1	49	3.84	1	0	47	3.84	1	0	47
1.23	5	1	49	3.88	1	0	47	3.88	1	0	47
1.23	5	1	49	3.92	1	0	47	3.92	1	0	47
1.23	5	1	49	3.96	1	0	47	3.96	1	0	47
1.23	5	1	49	4.00	1	0	47	4.00	1	0	47
1.23	5	1	49	4.04	1	0	47	4.04	1	0	47
1.23	5	1	49	4.08	1	0	47	4.08	1	0	47
1.23	5	1	49	4.12	1	0	47	4.12	1	0	47
1.23	5	1	49	4.16	1	0	47	4.16	1	0	47
1.23	5	1	49	4.20	1	0	47	4.20	1	0	47
1.23	5	1	49	4.24	1	0	47	4.24	1	0	47
1.23	5	1	49	4.28	1	0	47	4.28	1	0	47
1.23	5	1	49	4.32	1	0	47	4.32	1	0	47
1.23	5	1	49	4.36	1	0	47	4.36	1	0	47
1.23	5	1	49	4.40	1	0	47	4.40	1	0	47
1.23	5	1	49	4.44	1	0	47	4.44	1	0	47
1.23	5	1	49	4.48	1	0	47	4.48	1	0	47
1.23	5	1	49	4.52	1	0	47	4.52	1	0	47
1.23	5	1	49	4.56	1	0	47	4.56	1	0	47
1.23	5	1	49	4.60	1	0	47	4.60	1	0	47
1.23	5	1	49	4.64	1	0	47	4.64	1	0	47
1.23	5	1	49	4.68	1	0	47	4.68	1	0	47
1.23	5	1	49	4.72	1	0	47	4.72	1	0	47
1.23	5	1	49	4.76	1	0	47	4.76	1	0	47
1.23	5	1	49	4.80	1	0	47	4.80	1	0	47
1.23	5	1	49	4.84	1	0	47	4.84	1	0	47
1.23	5	1	49	4.88	1	0	47	4.88	1	0	47
1.23	5	1	49	4.92	1	0	47	4.92	1	0	47
1.23	5	1	49	4.96	1	0	47	4.96	1	0	47
1.23	5	1	49	5.00	1	0	47	5.00	1	0	47
1.23	5	1	49	5.04	1	0	47	5.04	1	0	47
1.23	5	1	49	5.08	1	0	47	5.08	1	0	47
1.23	5	1	49	5.12	1	0	47	5.12	1	0	47
1.23	5	1	49	5.16	1	0	47	5.16	1	0	47
1.23	5	1	49	5.20	1	0	47	5.20	1	0	47
1.23	5	1	49	5.24	1	0	47	5.24	1	0	47
1.23	5	1	49	5.28	1	0	47	5.28	1	0	47
1.23	5	1	49	5.32	1	0	47	5.32	1	0	47
1.23	5	1	49	5.36	1	0	47	5.36	1	0	47
1.23	5	1	49	5.40	1	0	47	5.40	1	0	47
1.23	5	1	49	5.44	1	0	47	5.44	1	0	47
1.23	5	1	49	5.48	1	0	47	5.48	1	0	47
1.23	5	1	49	5.52	1	0	47	5.52	1	0	47
1.23	5	1	49	5.56	1	0	47	5.56	1	0	47
1.23	5	1	49	5.60	1	0	47	5.60	1	0	47
1.23	5	1	49	5.64	1	0	47	5.64	1	0	47
1.23	5	1	49	5.68	1	0	47	5.68	1	0	47
1.23	5	1	49	5.72	1	0	47	5.72	1	0	47
1.23	5	1	49	5.76	1	0	47	5.76	1	0	47
1.23	5	1	49	5.80	1	0	47	5.80	1	0	47
1.23	5	1	49	5.84	1	0	47	5.84	1	0	47
1.23	5	1	49	5.88	1	0	47	5.88	1	0	47
1.23	5	1	49	5.92	1	0	47	5.92	1	0	47
1.23	5	1	49	5.96	1	0	47	5.96	1	0	47
1.23	5	1	49	6.00	1	0	47	6.00	1	0	47
1.23	5	1	49	6.04	1	0	47	6.04	1	0	47
1.23	5	1	49	6.08	1	0	47	6.08	1	0	47
1.23	5	1	49	6.12	1	0	47	6.12	1	0	47
1.23	5	1	49	6.16	1	0	47	6.16	1	0	47
1.23	5	1	49	6.20	1	0	47				

45

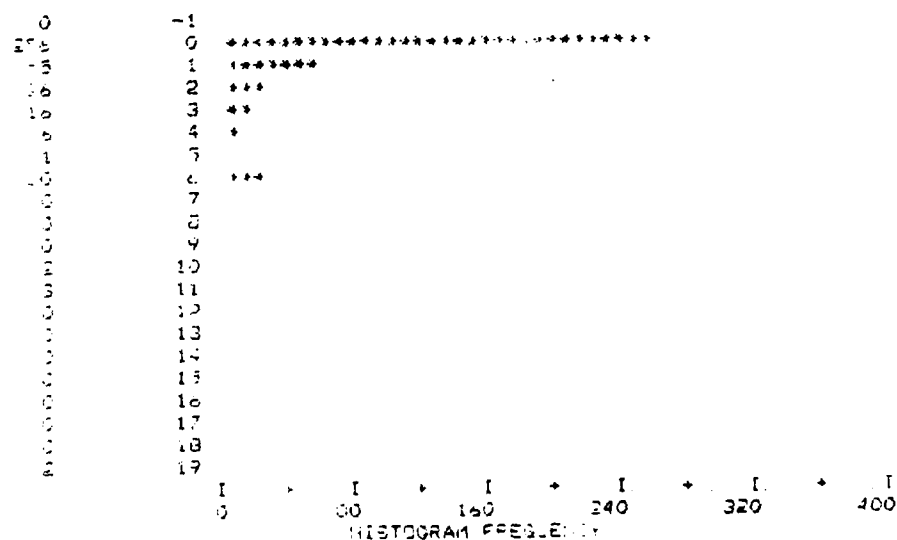
MEAN	1 569	STD ERR	118	MEDIAN	914
STD	3 531	STD DEV	2 318	VARIANCE	5 373
VARIANCE	4 950	SKEWNESS	1 445	KURTOSIS	2 171
MINIMUM	124	RANGE	10 564	MAXIMUM	0 0
SUM	10 564	SUM	10 564		

PERCENTILE	VALUE	PERCENTILE	VALUE	PERCENTILE	VALUE
25 00	172	25 00	452	75 00	597
50 00	914	50 00	2 010	75 00	3 078
75 00	3 601				
ALL CASES	597	MISSING CASES	0		

AREA OPEN WITH BUILDINGS

VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT
27	3	1	59	1 22	4	1	19				
27	1	0	59	1 27	3	1	80				
31	4	1	60	1 29	1	0	80				
38	2	1	61	1 39	1	0	80				
39	1	0	61	1 72	1	0	81				
43	3	1	62	1 72	1	0	81				
43	3	1	63	1 79	8	2	83				
44	1	0	63	1 96	1	0	83				
44	2	1	64	1 97	3	1	84				
45	1	0	64	2 13	11	3	87				
45	2	1	64	2 18	1	0	87				
47	6	2	66	2 61	3	1	88				
48	1	0	66	2 63	5	1	89				
54	1	0	66	2 77	1	0	89				
54	1	0	67	2 83	5	1	91				
58	4	1	68	2 88	2	1	91				
67	1	0	68	3 81	2	1	92				
69	2	1	68	4 04	4	1	93				
71	15	4	72	4 84	1	0	93				
72	9	2	75	5 98	4	1	94				
75	2	1	75	6 46	16	4	98				
85	3	1	76	9 83	2	1	99				
91	2	1	76	10 97	3	1	99				
1 00	2	1	77	16 85	2	1	100				
1 14	3	1	78								
1 17	1	0	78								

COUNT MIDPOINT ONE SYMBOL EQUALS APPROXIMATELY 8 00 OCCURRENCES



MEAN	1.17	STD DEV	1.17	ADJ ADJ	1.65
MODE	1.0	STD DEV	2.14	ADJ ADJ	1.73
MEAN	1.415	STD DEV	1.54	ADJ ADJ	1.83
MODE	1.34	RANGE	1.84	ADJ ADJ	1.90
MEAN	1.346	SUM	1.17	ADJ ADJ	1.90

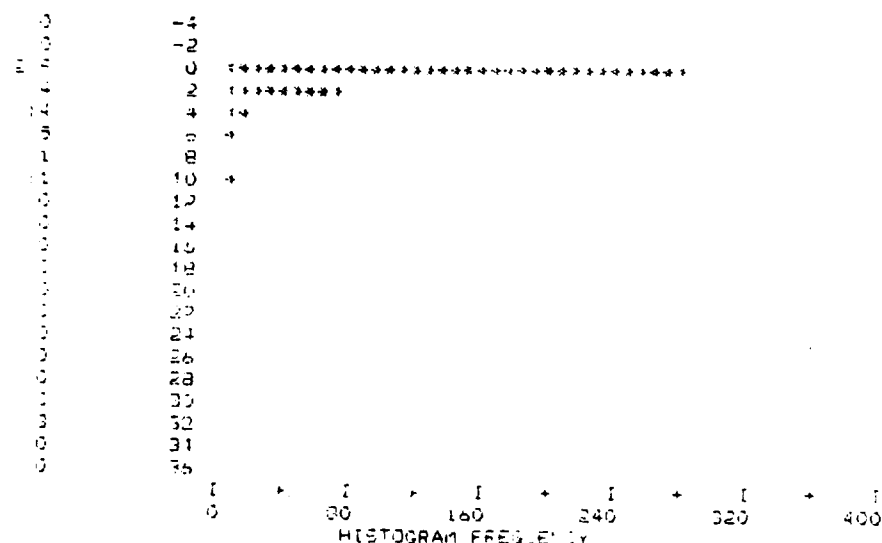
PERCENTILE	VALUE	PERCENTILE	VALUE	PERCENTILE	VALUE
10.00	1.0	25.00	1.0	50.00	1.0
25.00	1.065	50.00	1.065	75.00	1.065
50.00	1.130	75.00	1.130	90.00	1.130

MISSING CASES

AREA OPEN WITH OUT BLAGE

VALUE	FREQ	PCT	CUM	VALUE	FREQ	PCT	CUM	VALUE	FREQ	PCT	CUM
1.0	1.0	4.6	4.6	4.8	2	1.0	5.1	1.64	3	1.0	9.7
1.1	1	0	4.6	4.9	1	0	5.1	1.64	2	1.0	9.8
1.2	3	1	4.7	5.0	5	1	5.3	1.67	4	1.0	9.9
1.3	1	0	4.7	5.1	3	1	5.3	1.67	3	2.0	10.1
1.4	1	0	4.8	5.2	4	1	5.4	1.67	5	1.0	10.2
1.5	2	2	5.0	5.3	2	1	5.5	1.91	1	0	10.2
1.6	4	1	5.1	5.4	1	0	5.5	2.01	2	1	10.3
1.7	1	0	5.1	5.5	1	0	5.5	2.06	3	1	10.3
1.8	2	1	5.2	5.6	1	0	5.6	2.10	4	1	10.4
1.9	1	0	5.2	5.7	2	2	5.7	2.28	11	3	10.7
2.0	3	1	5.3	5.8	2	1	5.8	2.47	3	1	10.8
2.1	2	1	5.5	5.9	2	1	5.9	2.68	1	0	10.8
2.2	1	0	5.5	6.0	2	1	6.0	2.77	3	1	10.9
2.3	1	0	5.4	6.1	3	1	7.0	2.81	3	1	11.1
2.4	4	1	5.4	6.2	2	1	7.0	2.84	1	0	11.1
2.5	1	0	5.5	6.3	1	0	7.0	3.50	3	2	11.3
2.6	1	0	5.5	6.4	1	0	7.1	3.60	1	0	11.4
2.7	3	1	5.6	6.5	3	1	7.2	3.63	2	1	11.4
2.8	1	0	5.6	6.6	1	0	7.3	4.02	3	1	11.5
2.9	2	1	5.6	6.7	1	0	7.3	5.29	4	1	11.6
3.0	1	0	5.7	6.8	1	0	7.3	5.52	1	0	11.6
3.1	3	1	5.8	6.9	2	1	7.3	7.74	1	0	11.6
3.2	1	0	5.8	7.0	1	0	7.4	9.96	3	1	11.7
3.3	1	0	5.9	7.1	3	1	7.4	10.14	2	1	11.7
3.4	0	1	6.0	7.2	1	0	7.5	10.15	3	1	11.8
3.5	1	0	6.0	7.3	1	0	7.6	10.63	4	1	11.9
3.6	2	1	6.0	7.4	1	0	7.6	12.63	3	1	12.0

COUNT MIDPOINT ONE SYMBOL EQUALS APPROXIMATELY 8.00 OCCURRENCES



MEAN	1.145	STD DEV	17.5	MEDIAN	0.07
MODE	0.0	STD DEV	3.406	VARIANCE	11.000
KURTOSIS	55.413	SKURT	1.955	SKWNESS	8.660
SKEWNESS	124	RANGE	32.600	MINIMUM	0.0
MAXIMUM	32.600	SUM	101.809		

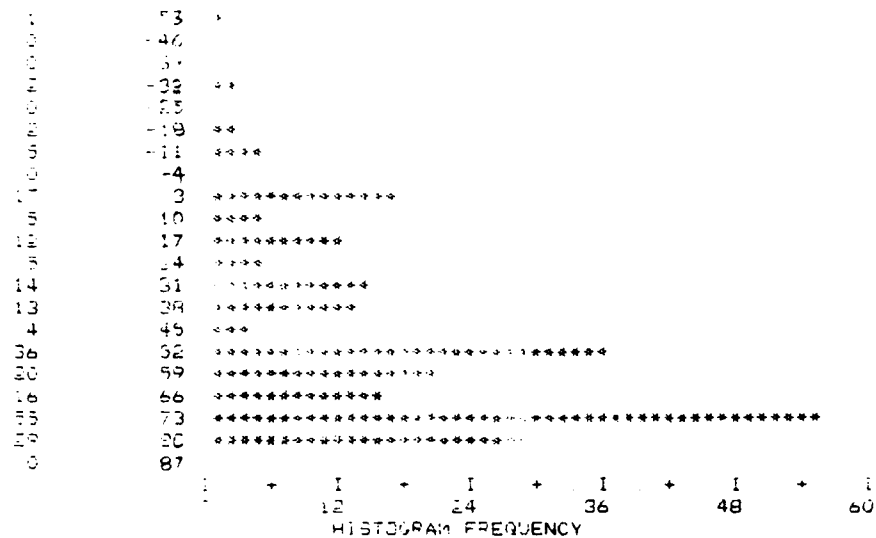
DATE LEFT	VALUE	PERCENTILE	VALUE	PERCENTILE	VALUE
11.00	0.0	25.00	0.1	55.00	0.0
51.01	0.07	66.70	22	75.00	1.481
91.00	2.506				
1000 1-666	557	MISSING VALUES	0		

General building descriptions

APPROX AGE OF STRUCTURE

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
-50	1	.4	.4	.4	.4
-30	2	.8	.8	.8	1.3
-20	2	.8	.8	.8	2.1
-12	1	.4	.4	.4	2.5
-10	4	1.7	1.7	1.7	4.2
0	15	6.4	6.4	6.4	10.6
4	1	.4	.4	.4	11.0
5	1	.4	.4	.4	11.4
10	5	2.1	2.1	2.1	13.6
15	2	.8	.8	.8	14.4
20	10	4.2	4.2	4.2	18.6
25	5	2.1	2.1	2.1	20.8
30	13	5.5	5.5	5.5	26.3
31	1	.4	.4	.4	26.7
35	2	.8	.8	.8	27.5
40	11	4.7	4.7	4.7	32.2
45	3	1.3	1.3	1.3	33.5
48	1	.4	.4	.4	33.9
50	27	11.4	11.4	11.4	45.3
55	9	3.8	3.8	3.8	49.2
58	1	.4	.4	.4	49.6
59	3	1.3	1.3	1.3	50.8
60	15	6.4	6.4	6.4	57.6
63	1	.4	.4	.4	58.1
65	15	6.4	6.4	6.4	64.4
70	31	13.1	13.1	13.1	77.5
74	1	.4	.4	.4	78.0
75	23	9.7	9.7	9.7	87.7
77	1	.4	.4	.4	88.1
78	3	1.3	1.3	1.3	89.4
79	1	.4	.4	.4	89.8
80	14	5.9	5.9	5.9	95.8
82	7	3.0	3.0	3.0	98.7
83	3	1.3	1.3	1.3	100.0
TOTAL		236	100.0	100.0	

COUNT FREQUENCY ONE SYMBOL EQUALS APPROXIMATELY 100 OCCURRENCES



MEAN	49.002	STD. ERR.	1.613	MEDIAN	59.000
MODE	70.000	STD. DEV.	17.544	VARIANCE	775.305
SKEWNESS	.299	S.E. KURT	1.592	SKEWNESS	-.998
S.E. SKEW	.158	RANGE	133.000	MINIMUM	-50.000
MAXIMUM	87.000	SUM	11706.000		

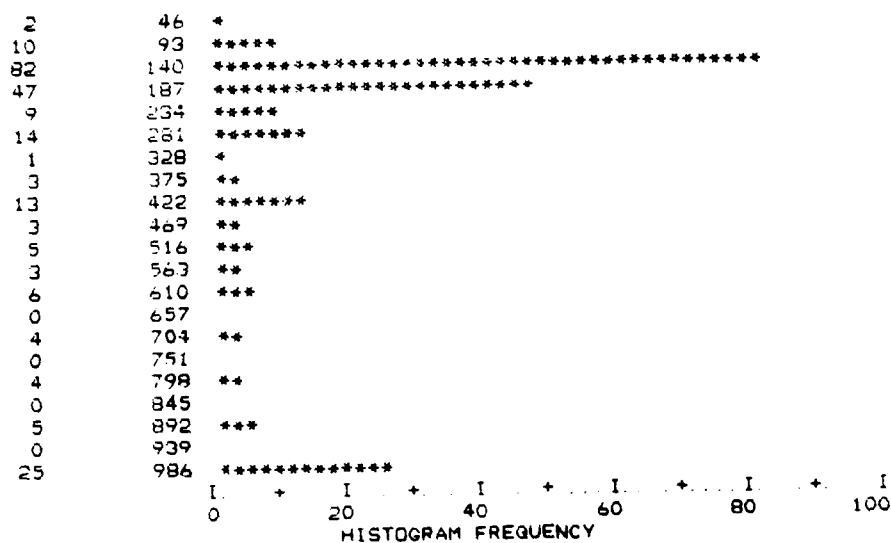
PERCENTILE	VALUE	PERCENTILE	VALUE	PERCENTILE	VALUE
10.00	0.00	25.00	30.000	33.30	45.000
50.00	59.000	66.70	70.000	75.00	70.000
90.00	80.000				

VALID CASES 236 MISSING CASES 0

EWIF EXPOSED WALL IN FOOTPRINT

VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT
32	1	0	0	172	2	1	42	300	5	2	69
60	1	0	1	176	2	1	42	320	1	0	70
80	1	0	1	180	7	3	45	370	2	1	71
90	1	0	2	182	1	0	46	380	1	0	71
100	2	1	3	186	3	1	47	400	8	3	75
108	1	0	3	188	1	0	47	410	1	0	75
110	5	2	5	190	5	2	50	420	1	0	75
120	16	7	12	192	2	1	50	430	2	1	76
122	1	0	12	196	3	1	52	440	1	0	77
130	5	2	14	200	10	4	56	450	2	1	78
132	4	2	16	202	3	1	57	480	1	0	78
134	1	0	17	206	3	1	58	500	3	1	79
140	15	6	23	208	1	0	59	520	2	1	80
142	1	0	23	210	2	1	60	540	1	0	81
144	3	1	25	220	3	1	61	560	1	0	81
148	5	2	27	223	1	0	61	575	1	0	81
150	5	2	29	240	3	1	63	600	6	3	84
152	5	2	31	244	1	0	63	692	1	0	84
154	1	0	31	250	1	0	64	700	3	1	86
156	4	2	33	260	6	3	66	800	4	2	87
160	16	7	40	280	2	1	67	900	5	2	89
170	2	1	41	284	1	0	67	999	25	11	100

COUNT MIDPOINT ONE SYMBOL EQUALS APPROXIMATELY 2.00 OCCURRENCES



MEAN	335.453	STD ERR	18.879	MEDIAN	192.000
MODE	999.000	STD DEV	290.028	VARIANCE	84116.291
KURTOSIS	563	S E KURT	1.992	SKEWNESS	1.414
S E SKEW	.158	RANGE	967.000	MINIMUM	32.000
MAXIMUM	999.000	SUM	79167.000		

PERCENTILE	VALUE	PERCENTILE	VALUE	PERCENTILE	VALUE
10.00	120.000	25.00	148.000	33.30	159.684
50.00	192.000	66.70	280.316	75.00	417.500
90.00	999.000				

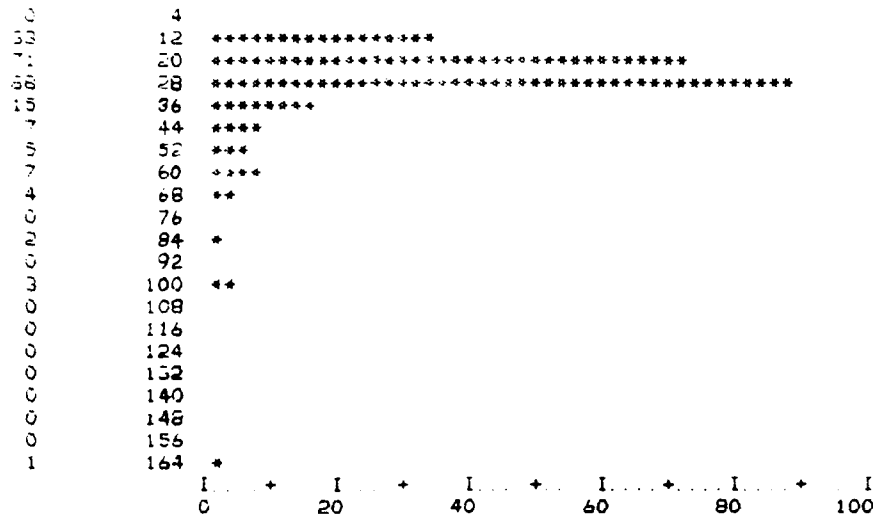
VALID CASES 236 MISSING CASES 0

HT AVERAGE WALL HEIGHT

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	8	1	.4	.4	.4
	9	1	.4	.4	.8
	10	2	.8	.8	1.7
	12	7	3.0	3.0	4.7
	14	7	3.0	3.0	7.6
	15	15	6.4	6.4	14.0
	16	22	9.3	9.3	23.3
	17	2	.6	.8	24.2
	18	4	1.7	1.7	25.8
	19	1	.4	.4	26.3
	20	39	16.5	16.5	42.8
	22	3	1.3	1.3	44.1
	24	3	1.3	1.3	45.3
	25	39	16.5	16.5	61.9
	26	7	3.0	3.0	64.8
	27	2	.8	.8	65.7
	28	5	2.1	2.1	67.8
	30	32	13.6	13.6	81.4
	32	3	1.3	1.3	82.6
	33	1	.4	.4	83.1
	35	8	3.4	3.4	86.4
	36	3	1.3	1.3	87.7
	40	6	2.5	2.5	90.3
	41	1	.4	.4	90.7

50	5	2 1	2 1	92 8
50	7	3 0	3 0	95 8
70	4	1 7	1 7	97 5
80	2	8	8	98 3
100	3	1 3	1 3	99 6
160	1	4	4	100 0
<hr/>				
TOTAL	236	100 0	100 0	

COUNT MIDPOINT ONE SYMBOL EQUALS APPROXIMATELY 2.00 OCCURRENCES



HISTOGRAM FREQUENCY

MEAN	27 619	STD ERR	1 130	MEDIAN	25 000
MODE	20 000	STD DEV	17 363	VARIANCE	301 462
KURTOSIS	17 553	S E KURT	1 992	SKEWNESS	3 447
S E SKEW	158	RANGE	152 000	MINIMUM	8 000
MAXIMUM	160 000	SUM	6518 000		

PERCENTILE	VALUE	PERCENTILE	VALUE	PERCENTILE	VALUE
10 00	15 000	25 00	18 000	33 30	20 000
50 00	25 000	66 70	28 000	75 00	30 000
90 00	40 300				

VALID CASES 236 MISSING CASES 0

LOT1 LOT SIZE SIZE ONE

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	20	1	.4	.4	.4
	24	1	.4	.4	.8
	28	3	1.3	1.3	2.1
	30	2	.8	.8	3.0
	40	4	1.7	1.7	4.7
	48	10	4.2	4.2	8.9
	50	25	10.6	10.6	19.5
	55	1	.4	.4	19.9
	60	15	6.8	6.8	26.7
	65	1	.4	.4	27.1
	70	11	4.7	4.7	31.8
	75	10	4.2	4.2	36.0
	80	14	5.9	5.9	41.9

85	1	.4	.4	42.4
90	0	2.5	2.5	44.9
100	26	11.0	11.0	55.9
110	3	1.3	1.3	57.2
120	5	2.1	2.1	59.3
140	1	.4	.4	59.7
150	10	4.2	4.2	64.0
160	1	.4	.4	64.4
185	1	.4	.4	64.8
200	17	7.2	7.2	72.0
220	1	.4	.4	72.5
228	1	.4	.4	72.9
230	1	.4	.4	73.3
250	4	1.7	1.7	75.0
270	1	.4	.4	75.4
300	14	5.9	5.9	81.4
350	4	1.7	1.7	83.1
400	10	4.2	4.2	87.3
420	2	.8	.8	88.1
450	2	.8	.8	89.0
500	10	4.2	4.2	93.2
600	4	1.7	1.7	94.9
800	3	1.3	1.3	96.2
999	9	3.8	3.8	100.0
GREATER THAN 999				
TOTAL	236	100.0	100.0	

COUNT MIDPOINT ONE SYMBOL EQUALS APPROXIMATELY 1.50 OCCURRENCES

63	40	*****
72	87	*****
16	134	*****
19	181	*****
7	228	*****
1	275	*
14	322	*****
4	369	***
12	416	*****
2	463	*
10	510	*****
0	557	
4	604	***
0	651	
0	698	
0	745	
3	792	**
0	839	
0	886	
0	933	
9	980	*****

I + I + I + I + I + I + I
0 15 30 45 60 75
HISTOGRAM FREQUENCY

MEAN	220.733	STD EPR	14.513	MEDIAN	100.000
MODE	100.000	STD DEV	222.953	VARIANCE	49707.924
KURTOSIS	4.563	S E KURT	1.992	SKEWNESS	2.155
S E SKEN	158	RANGE	979.000	MINIMUM	20.000
MAXIMUM	999.000	SUM	47373.000		

PERCENTILE	VALUE	PERCENTILE	VALUE	PERCENTILE	VALUE
10.00	50.000	25.00	60.000	33.30	75.000
50.00	100.000	66.70	200.000	75.00	265.000
90.00	500.000				

VALID CASES 236 MISSING CASES 0

LOT2 LOT SIZE SIDE TWO

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	50	7	3.0	3.0	3.0
	60	4	1.7	1.7	4.7
	70	4	1.7	1.7	6.4
	75	3	1.3	1.3	7.6
	80	14	5.9	5.9	13.6
	90	12	5.1	5.1	18.6
	95	1	.4	.4	19.1
	100	32	13.6	13.6	32.6
	110	1	.4	.4	33.1
	120	15	6.4	6.4	39.4
	125	1	.4	.4	39.8
	130	27	11.4	11.4	51.3
	160	2	.8	.8	52.1
	175	4	1.7	1.7	53.8
	180	2	.8	.8	54.7
	200	29	12.3	12.3	66.9
	208	1	.4	.4	67.4
	223	1	.4	.4	67.8
	250	9	3.8	3.8	71.6
	300	16	6.8	6.8	78.4
	350	5	2.1	2.1	80.5
	400	16	6.8	6.8	87.3
	420	1	.4	.4	87.7
	500	9	3.8	3.8	91.5
	600	5	2.1	2.1	93.6
	800	5	2.1	2.1	95.8
	900	1	.4	.4	96.2
GREATER THAN 999	999	9	3.8	3.8	100.0
TOTAL		236	100.0	100.0	

COUNT MIDPOINT ONE SYMBOL EQUALS APPROXIMATELY 1.50 OCCURRENCES

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32      65 *****
62      111 *****
33      137 *****
33      203 *****
9       249 *****
16      295 *****
5       341 ***
16      387 *****
1       433 *
9       479 *****
0       525
0       571
5       617 ***
0       663
0       709
0       755
5       801 ***
0       847
1       893 *
0       939
9       985 *****

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I . . . + . I . . . + . I . . . + . I . . . + . I
0      15      30      45      60      75
HISTOGRAM FREQUENCY

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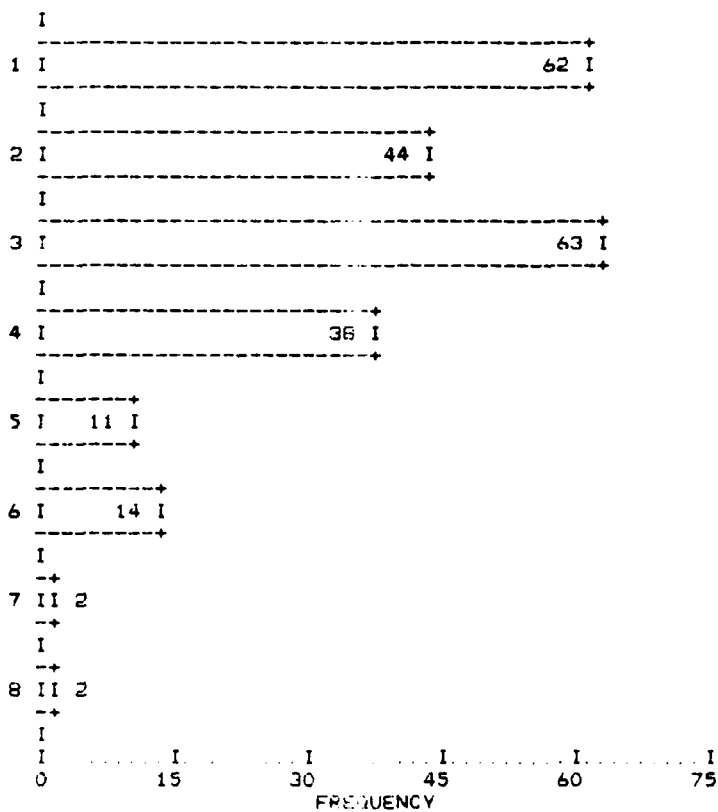
MEAN	242.784	STD ERR	14.343	MEDIAN	150.000
MODE	100.000	STD DEV	220.343	VARIANCE	48551.225
KURTOSIS	4.000	S E KURT	1.992	SKEWNESS	2.059
S E SKEW	158	RANGE	949.000	MINIMUM	50.000
MAXIMUM	999.000	SUM	57297.000		

PERCENTILE	VALUE	PERCENTILE	VALUE	PERCENTILE	VALUE
10.00	80.000	25.00	100.000	33.30	119.210
50.00	150.000	65.70	200.632	75.00	300.000
90.00	300.000				

VALID CASES 236 MISSING CASES 0

NUM BUILD NUM ADDITIONAL BUILD IN FOOT

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	1	62	26.3	26.3	26.3
	2	44	18.6	18.6	44.9
	3	63	26.7	26.7	71.6
	4	38	16.1	16.1	87.7
	5	11	4.7	4.7	92.4
	6	14	5.9	5.9	98.3
	7	2	.8	.8	99.2
	8	2	.8	.8	100.0
	TOTAL	236	100.0	100.0	



MEAN	2.797	STD ERR	102	MEDIAN	3.000
MODE	3.000	STD DEV	1.560	VARIANCE	2.435
KURTOSIS	324	S E KURT	1.992	SKEWNESS	.783
S E SKEW	158	RANGE	7.000	MINIMUM	1.000
MAXIMUM	8.000	SUM	660.000		

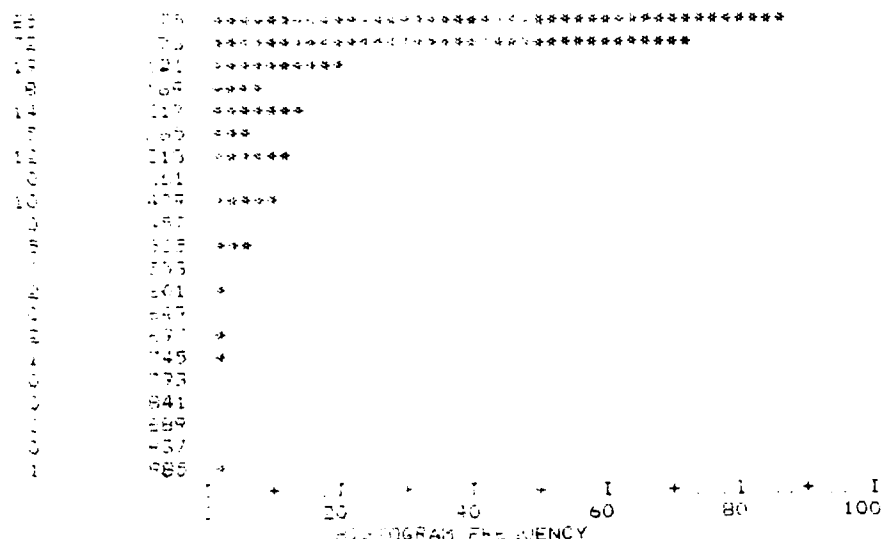
PERCENTILE	VALUE	PERCENTILE	VALUE	PERCENTILE	VALUE
10.00	1.000	25.00	1.000	33.30	2.000
50.00	3.000	50.00	3.000	75.00	4.000
90.00	5.000				

VALID CASES 236 MISSING CASES 0

SIDE1 SIDE ONE OF BLDG

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	10	1	.4	.4	.4
	12	2	.8	.8	1.3
	15	4	1.7	1.7	3.0
	18	2	.8	.8	3.8
	20	3	1.3	1.3	5.1
	24	2	.8	.8	5.9
	25	1	.4	.4	6.4
	30	28	11.9	11.9	18.2
	35	3	1.3	1.3	19.5
	36	14	5.9	5.9	25.4
	40	20	8.5	8.5	33.9
	42	1	.4	.4	34.3
	45	4	1.7	1.7	36.0
	50	26	11.0	11.0	47.0
	52	2	.8	.8	47.9
	60	13	5.5	5.5	53.4
	65	4	1.7	1.7	55.1
	66	1	.4	.4	55.5
	70	7	3.0	3.0	58.5
	75	8	3.4	3.4	61.9
	80	9	3.8	3.8	65.7
	90	1	.4	.4	66.1
	96	1	.4	.4	66.5
	100	14	5.9	5.9	72.5
	120	2	.8	.8	73.3
	130	2	.8	.8	74.2
	140	1	.4	.4	74.6
	150	5	2.1	2.1	76.7
	175	2	.8	.8	77.5
	180	1	.4	.4	78.0
	200	14	5.9	5.9	83.9
	250	5	2.1	2.1	86.0
	300	12	5.1	5.1	91.1
	400	10	4.2	4.2	95.3
	500	5	2.1	2.1	97.5
	600	2	.8	.8	98.3
	700	2	.8	.8	99.2
	740	1	.4	.4	99.6
	999	1	.4	.4	100.0
TOTAL		236	100.0	100.0	

COUNT MIDPOINT ONE SYMBOL EQUALS APPROXIMATELY 2.00 OCCURRENCES



MEAN	50.000	STD. DEV.	14.987	MEDIAN	60.000
VARIANCE	224.913	STD. ERROR	1.992	VARIANCE	22499.213
SKEWNESS	2.528	RANGE	989.000	SKEWNESS	2.528
MINIMUM	10.000	SUM	25049.000	MINIMUM	10.000

PERCENTILE	VALUE	PERCENTILE	VALUE	PERCENTILE	VALUE
10.00	30.000	25.00	35.000	33.30	40.000
50.00	50.000	66.70	100.000	75.00	150.000
90.00	90.000				

VALID CASES 100 MISSING CASES 0

SIDE2 SIDE TWO OF SLDG

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	5	1	.4	.4	.4
	12	1	.4	.4	.8
	20	2	.8	.8	1.7
	24	15	6.4	6.4	8.1
	25	7	3.0	3.0	11.0
	26	12	5.1	5.1	16.1
	27	1	.4	.4	16.5
	28	12	5.1	5.1	21.6
	30	42	17.8	17.8	39.4
	33	1	.4	.4	39.8
	34	1	.4	.4	40.3
	35	1	.4	.4	40.7
	36	6	2.5	2.5	43.2
	38	1	.4	.4	43.6
	40	17	7.2	7.2	50.8
	42	2	.8	.8	51.7
	45	4	1.7	1.7	53.4
	50	12	5.1	5.1	58.5
	55	1	.4	.4	58.9
	60	7	3.0	3.0	61.9
	65	1	.4	.4	62.3
	70	6	2.5	2.5	64.8
	75	1	.4	.4	65.3
	80	6	2.5	2.5	67.8

COUNT MIDPOINT ONE SYMBOL EQUALS APPROXIMATELY 4 00 OCCURRENCES

HISTOGRAM FREQUENCY

VALID CASES	206	MISSING CASES	0
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TYPE STRUCTURE TYPE- SAGE

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
1 UNIT STRUCTURE	1	115	48.7	48.7	48.7
2 UNITS	2	4	1.7	1.7	50.4
3 TO 4 UNITS	3	5	2.1	2.1	52.5
5 TO 9 UNITS	4	2	.8	.8	53.4
10 TO 19 UNITS	5	0	1.3	1.3	54.7
20 TO 49 UNITS	6	1	.4	.4	55.1
OFFICE BUILDING	8	1	.4	.4	55.5
COMMERCIAL BUILD	9	42	39.0	39.0	94.5
INDUSTRIAL	10	2	.8	.8	95.3
EDUCATIONAL	11	5	2.5	2.5	97.9
RELIGIOUS	12	3	1.3	1.3	99.2
HEALTH BUILDING	13	1	.4	.4	99.6
OTHER	14	1	.4	.4	100.0
TOTAL		236	100.0	100.0	

COUNT VALUE ONE SYMBOL EQUALS APPROXIMATELY 4.00 OCCURRENCES

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115 1.00 *****
4 2.00 *
5 3.00 *
2 4.00 *
2 5.00 *
1 6.00
0 7.00
1 8.00
42 9.00 *****
2 10.00 *
5 11.00 **
0 12.00 *
1 13.00
0 14.00
1 15.00

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HISTOGRAM FREQUENCY

MEAN	4.886	STD. ERR.	.267	MEDIAN	2.000
MODE	1.000	STD. DEV.	4.102	VARIANCE	16.825
KURTOSIS	41.724	SKEWNESS	1.992	MINIMUM	1.000
SKEWNESS	1.992	RANGE	14.000		
MAXIMUM	15.000	SUM	1152.000		

PERCENTILE	VALUE	PERCENTILE	VALUE	PERCENTILE	VALUE
10.00	1.000	25.00	1.000	33.30	1.000
50.00	2.000	66.70	9.000	75.00	9.000
90.00	9.000				
VALID CASES	236	MISSING CASES	0		

Spatial areas of building material types

APAINT AREA PAINTED SURFACE

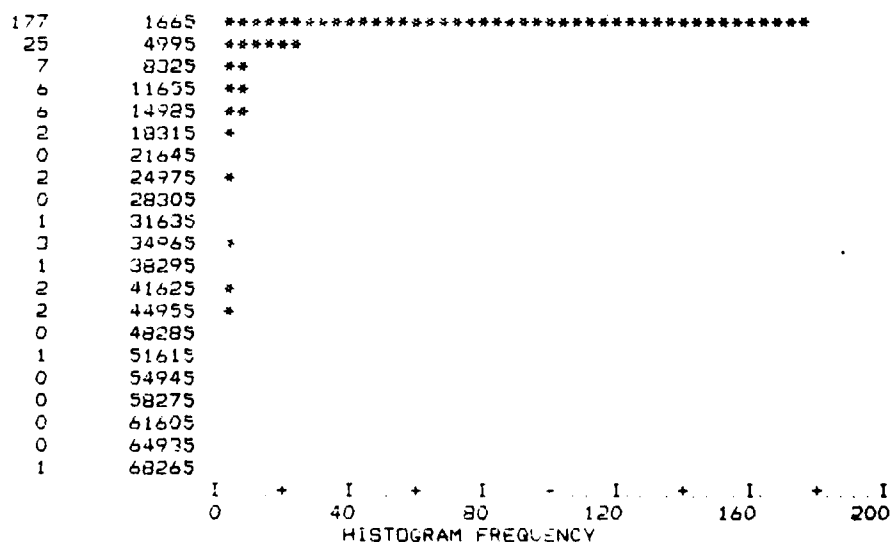
VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT
0 0	18	8	8	640 00	1	0	27	1488 21	1	0	47
15 61	1	0	8	649 35	1	0	28	1509 86	1	0	47
23 39	1	0	8	675 81	1	0	28	1526 96	1	0	47
46 51	1	0	9	677 03	1	0	28	1585 61	1	0	48
63 00	1	0	9	677 49	1	0	29	1632 00	1	0	48
69 45	1	0	10	759 72	1	0	29	1680 00	1	0	49
77 55	1	0	10	764 65	1	0	30	1718 36	1	0	49
86 15	1	0	11	770 00	1	0	30	1737 84	1	0	50
88 59	1	0	11	800 90	1	0	31	1835 45	1	0	50
97 77	1	0	11	805 57	1	0	31	1963 82	1	0	50
120 17	1	0	12	812 71	1	0	31	1971 71	1	0	51
124 39	1	0	12	879 36	1	0	32	1978 32	1	0	51
129 05	1	0	13	885 58	1	0	32	2016 00	1	0	52
156 27	1	0	13	889 25	1	0	33	2073 19	1	0	52
212 17	1	0	14	890 18	1	0	33	2099 42	1	0	53
248 82	1	0	14	892 46	1	0	33	2112 66	1	0	53
256 71	1	0	14	914 16	1	0	34	2130 00	1	0	53
258 06	1	0	15	922 64	1	0	34	2161 31	1	0	54
259 68	1	0	15	926 89	1	0	35	2219 84	1	0	54
276 92	1	0	16	940 80	1	0	35	2240 00	1	0	55
300 56	1	0	16	954 02	1	0	36	2309 83	1	0	55
301 64	1	0	17	979 31	1	0	36	2350 12	1	0	56
304 14	1	0	17	981 81	1	0	36	2382 10	1	0	56
310 38	1	0	17	997 03	1	0	37	2400 00	1	0	56
313 56	1	0	18	1013 94	1	0	37	2412 37	1	0	57
347 45	1	0	18	1024 92	1	0	38	2441 24	1	0	57
353 17	1	0	19	1032 76	1	0	38	2501 16	1	0	58
379 96	1	0	19	1047 41	1	0	39	2545 22	1	0	58
380 77	1	0	19	1053 22	1	0	39	2546 34	1	0	58
383 41	1	0	20	1059 41	1	0	39	2547 86	1	0	59
422 75	1	0	20	1106 04	1	0	40	2554 62	1	0	59
432 00	1	0	21	1131 50	1	0	40	2713 00	1	0	60
456 49	1	0	21	1153 48	1	0	41	2750 00	2	1	61
463 47	1	0	22	1170 50	1	0	41	2787 10	1	0	61
504 00	1	0	22	1178 18	1	0	42	2800 00	1	0	61
509 83	1	0	22	1182 81	1	0	42	2811 81	1	0	62
521 62	1	0	23	1188 00	1	0	42	3000 00	2	1	63
546 59	1	0	23	1195 34	1	0	43	3023 47	1	0	63
555 52	1	0	24	1239 62	1	0	43	3080 80	1	0	64
558 55	1	0	24	1275 52	1	0	44	3124 24	1	0	64
559 77	1	0	25	1329 85	1	0	44	3158 69	1	0	64
560 43	1	0	25	1388 91	1	0	44	3185 49	1	0	65
562 25	1	0	25	1400 47	1	0	45	3187 90	1	0	65
564 55	1	0	26	1409 68	1	0	45	3266 67	1	0	66
572 73	1	0	26	1419 14	1	0	46	3333 09	1	0	66
611 59	1	0	27	1460 60	1	0	46	3416 00	1	0	67

VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT
3443 81	1	0	67	4956 57	1	0	78	9644 80	1	0	89
3484 08	1	0	67	4984 71	1	0	79	9751 53	1	0	90
3615 50	1	0	68	5184 00	1	0	79	9939 80	1	0	90
3680 00	1	0	68	5257 14	1	0	80	10008 00	1	0	91
3680 69	1	0	69	5400 00	1	0	80	10359 11	1	0	91
3684 53	1	0	69	5442 23	1	0	81	10830 74	1	0	92
3738 51	1	0	69	5490 20	1	0	81	11015 38	1	0	92
3750 00	1	0	70	5500 00	1	0	81	11195 81	1	0	92
3750 00	1	0	70	5524 65	1	0	82	11219 51	1	0	93
3875 27	1	0	71	5591 84	1	0	82	11432 52	1	0	93
3904 69	1	0	71	5720 09	1	0	83	11560 08	1	0	94
3905 33	2	1	72	5950 00	1	0	83	11913 16	1	0	94
4114 29	1	0	72	6000 00	1	0	83	12347 74	2	1	95
4200 00	1	0	73	6400 00	1	0	84	12989 88	1	0	95
4264 00	1	0	73	7000 00	1	0	84	15110 29	1	0	96

506 61	1	0	34	1923 11	1	0	54	3074 89	1	0	73
618 82	1	0	35	1930 19	1	0	54	3118 86	1	0	74
663 27	1	0	35	1942 95	1	0	55	3193 96	1	0	74
713 53	1	0	36	1967 82	1	0	55	3221 05	1	0	75
720 00	1	0	36	1988 01	1	0	56	3323 08	1	0	75
762 55	1	0	36	2005 57	1	0	56	3560 91	1	0	75
864 86	1	0	37	2025 76	1	0	56	3565 64	1	0	76
880 00	1	0	37	2044 19	1	0	57	3567 19	1	0	76
917 48	1	0	38	2057 28	1	0	57	3669 38	1	0	77
947 37	1	0	38	2064 10	1	0	58	3800 00	1	0	77
1066 95	1	0	39	2064 96	1	0	58	3828 86	1	0	78
1102 17	1	0	39	2069 20	1	0	58	3924 48	1	0	78
1121 10	1	0	39	2091 12	1	0	59	3967 24	1	0	78
1123 28	1	0	40	2126 91	1	0	59	4026 06	1	0	79
1136 64	1	0	40	2137 00	1	0	60	4200 00	1	0	79
1215 75	1	0	41	2149 88	1	0	60	4248 93	1	0	80
1254 89	1	0	41	2179 55	1	0	61	4275 31	1	0	80
1280 36	1	0	42	2229 34	1	0	61	4297 54	1	0	81
1415 31	1	0	42	2233 61	1	0	61	4361 23	1	0	81
1452 90	1	0	42	2238 28	1	0	62	4402 83	1	0	81
1456 68	1	0	43	2253 41	1	0	62	4457 14	1	0	82
1457 24	1	0	43	2253 43	1	0	63	4480 00	1	0	82
1464 05	1	0	44	2261 23	1	0	63	4524 26	1	0	83
1491 31	1	0	44	2264 15	1	0	64	4661 49	1	0	83
1502 17	1	0	44	2302 40	1	0	64	4919 37	1	0	83
1503 95	1	0	45	2339 09	1	0	64	5018 02	1	0	84
1558 76	1	0	45	2352 59	1	0	65	5847 27	1	0	84
1592 66	1	0	46	2369 82	1	0	65	6216 00	1	0	85
1595 45	1	0	46	2473 95	1	0	66	6421 68	1	0	85
1602 34	1	0	47	2480 78	1	0	66	6538 85	1	0	86
1620 16	1	0	47	2503 91	1	0	67	6668 10	1	0	86
1627 60	1	0	47	2509 68	1	0	67	7350 19	1	0	86
1655 00	1	0	48	2513 99	1	0	67	7530 15	1	0	87
1674 42	1	0	48	2556 14	1	0	68	7645 87	1	0	87
1702 34	1	0	49	2576 22	1	0	68	8547 48	1	0	88

VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT
9149 26	1	0	88	14140 09	1	0	92	33611 21	1	0	96
9681 09	1	0	89	14353 38	1	0	93	34734 18	1	0	97
10113 60	1	0	89	14889 71	1	0	93	36048 53	1	0	97
10155 50	1	0	89	14985 00	1	0	94	39320 64	1	0	97
10262 85	1	0	90	17532 18	1	0	94	41240 77	1	0	98
10863 03	1	0	90	19959 18	1	0	94	41421 57	1	0	98
12450 69	1	0	91	23385 37	1	0	95	44772 70	2	1	99
12982 04	1	0	91	24000 00	1	0	95	49950 00	1	0	100
13668 64	2	1	92	29970 00	1	0	96	69930 00	1	0	100

COUNT MIDPOINT ONE SYMBOL EQUALS APPROXIMATELY 4.00 OCCURRENCES



MEAN 4502.168
 MODE 0.0
 KURTOSIS 16.309
 S.E. SKEW 1.88
 MAXIMUM 6990.000

STD. ERR. 519.815
 STD. DEV. 9521.792
 S.E. KURT 1.942
 RANGE 6990.000
 SUM 1062511.59

MEDIAN 1769.813
 VARIANCE 90664516.1
 SKEWNESS 3.807
 MINIMUM 0.0

PERCENTILE	VALUE	PERCENTILE	VALUE	PERCENTILE	VALUE
10.00	0.0	25.00	0.0	33.30	390.201
50.00	1769.813	66.70	2510.018	75.00	3501.450
90.00	11339.328				

VALID CASES 236 MISSING CASES 0

ASTONE AREA STONE SURFACE

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	SUM PERCENT
	0.0	200	84.7	84.7	84.7
	16.20	1	.4	.4	85.2
	22.89	1	.4	.4	85.6
	23.39	1	.4	.4	86.0
	32.09	1	.4	.4	86.4
	57.92	1	.4	.4	86.9
	74.18	1	.4	.4	87.3
	84.00	1	.4	.4	87.7
	145.60	1	.4	.4	88.1
	160.00	1	.4	.4	88.6
	170.53	1	.4	.4	89.0
	174.98	1	.4	.4	89.4
	315.89	1	.4	.4	89.8
	342.86	1	.4	.4	90.3
	384.62	1	.4	.4	90.7
	398.69	1	.4	.4	91.1
	439.92	1	.4	.4	91.5
	475.35	1	.4	.4	91.9
	738.46	1	.4	.4	92.4
	792.00	1	.4	.4	92.8
	872.84	1	.4	.4	93.2
	1026.48	1	.4	.4	93.6
	1304.01	1	.4	.4	94.1
	1561.68	1	.4	.4	94.5
	2202.97	1	.4	.4	94.9
	2333.43	2	.8	.8	95.8
	2897.56	1	.4	.4	96.2
	4040.82	1	.4	.4	96.6
	7781.95	1	.4	.4	97.0
	13945.96	1	.4	.4	97.5
	14426.04	2	.8	.8	98.3
	15164.31	1	.4	.4	98.7
	15515.47	1	.4	.4	99.2
	17164.03	1	.4	.4	99.6
	24272.82	1	.4	.4	100.0
TOTAL		236	100.0	100.0	

COUNT MIDPOINT ONE SYMBOL EQUALS APPROXIMATELY 8.00 OCCURRENCES

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221      575 *****
3        1732
3        2888
1        4044
0        5200
0        6356
1        7512
0        8668
0        9824
0       10980
0       12136
0       13292
3       14448
2       15604
1       16760
0       17916
0       19072
0       20228
0       21384
0       22540
1       23696

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      I   +   I   +   I   +   I   +   I   +   I
      0   80  160  240  320  400
      HISTOGRAM FREQUENCY

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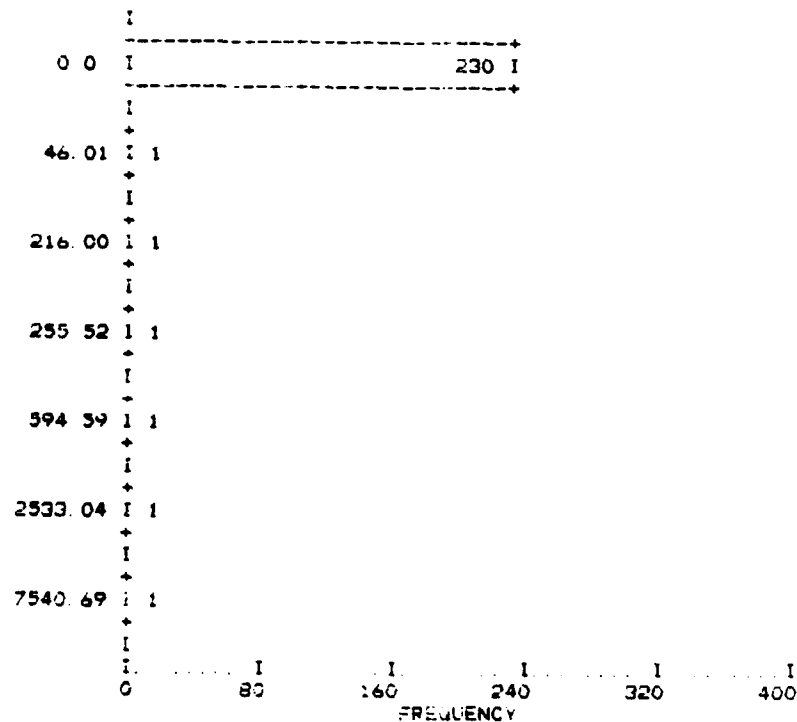
MEAN	619.235	STD ERR	189.134	MEDIAN	0.0
MODE	0.0	STD DEV	2905.538	VARIANCE	8442122.88
KURTOSIS	33.040	S E KURT	1.992	SKEWNESS	5.627
S E SKEW	158	RANGE	24272.818	MINIMUM	0.0
MAXIMUM	24272.818	SUM	146139.376		

PERCENTILE	VALUE	PERCENTILE	VALUE	PERCENTILE	VALUE
10.00	0.0	25.00	0.0	33.30	0.0
50.00	0.0	66.70	0.0	75.00	0.0
90.00	355.385				

VALID CASES	236	MISSING CASES	0
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AGALV AREA GALVANIZED SURFACE

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	0.0	230	97.5	97.5	97.5
	46.01	1	.4	.4	97.9
	216.00	1	.4	.4	98.3
	255.52	1	.4	.4	98.7
	594.59	1	.4	.4	99.2
	2533.04	1	.4	.4	99.6
	7540.69	1	.4	.4	100.0
	TOTAL	236	100.0	100.0	



MEAN	47.398	STD ERR	33.762	MEDIAN	0.0
MODE	0.0	STD DEV	518.655	VARIANCE	269003.034
KURTOSIS	189.464	S E KURT	1.992	SKENNESS	13.419
S E SKEW	158	RANGE	7540.690	MINIMUM	0.0
MAXIMUM	7540.690	SUM	11185.852		

PERCENTILE	VALUE	PERCENTILE	VALUE	PERCENTILE	VALUE
10.00	0.0	25.00	0.0	33.30	0.0
50.00	0.0	66.70	0.0	75.00	0.0
90.00	0.0				

VALID CASES 236 MISSING CASES 0

ADOTHER AREA OTHER MATERIALS

VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT
0 0	104	44	44	333 33	1	0	63	1045 75	1	0	82
12 55	1	0	44	337 93	1	0	63	1114 16	1	0	82
17 77	1	0	45	346 42	1	0	64	1170 73	1	0	83
19 47	1	0	45	364 53	1	0	64	1200 00	1	0	83
23 87	1	0	46	365 22	1	0	64	1222 00	1	0	83
30 32	1	0	46	366 39	1	0	65	1336 41	1	0	84
41 90	1	0	47	366 55	1	0	65	1400 00	1	0	84
45 45	1	0	47	369 34	1	0	66	1600 86	1	0	85
49 20	1	0	47	375 06	1	0	66	1612 00	1	0	85
52 14	1	0	48	378 95	1	0	67	1654 01	1	0	86
55 04	1	0	48	385 17	1	0	67	1816 35	1	0	86
118 60	1	0	49	388 24	1	0	67	1884 82	1	0	86
120 00	1	0	49	390 24	1	0	68	1939 66	1	0	87
132 62	1	0	50	392 93	1	0	68	1998 00	1	0	87
144 95	1	0	50	407 70	1	0	69	2034 62	1	0	88
154 49	1	0	50	408 16	1	0	69	2069 75	1	0	88
221 48	1	0	51	411 75	1	0	69	2071 66	1	0	89
232 26	1	0	51	412 90	1	0	70	2085 59	1	0	89
242 97	1	0	52	414 65	1	0	70	2184 00	1	0	89
246 33	1	0	52	418 73	1	0	71	2251 17	1	0	90
253 65	1	0	53	434 09	1	0	71	2255 81	1	0	90
254 07	1	0	53	486 13	2	1	72	2510 05	1	0	91
257 50	1	0	53	486 53	1	0	72	2768 00	1	0	91
261 61	1	0	54	493 51	1	0	73	2830 40	1	0	92
261 62	1	0	54	499 79	1	0	73	3040 00	1	0	92
266 52	1	0	55	527 51	1	0	74	3276 50	1	0	92
268 53	1	0	55	527 74	1	0	74	3534 92	1	0	93
276 26	1	0	56	544 50	1	0	75	3810 96	1	0	93
281 80	1	0	56	560 00	1	0	75	4152 47	1	0	94
281 90	1	0	56	568 42	1	0	75	4488 61	1	0	94
287 40	1	0	57	599 47	1	0	76	5320 00	1	0	94
287 61	1	0	57	600 00	1	0	76	6285 71	1	0	95
295 31	1	0	58	602 55	1	0	77	7896 33	1	0	95
306 85	1	0	58	607 29	1	0	77	8000 00	1	0	96
318 44	1	0	58	620 11	1	0	78	8201 04	1	0	96
318 48	1	0	59	669 04	1	0	78	8295 87	1	0	97
320 00	1	0	59	706 56	1	0	79	11557 81	1	0	97
320 59	1	0	60	742 66	1	0	79	12900 00	1	0	97
323 08	1	0	60	815 45	1	0	79	14335 65	1	0	98
323 74	1	0	61	829 05	1	0	80	14938 32	1	0	98
325 61	1	0	61	864 66	1	0	80	21236 52	1	0	99
326 53	1	0	61	879 07	1	0	81	22795 97	1	0	99
328 95	1	0	62	899 51	1	0	81	27998 29	1	0	100
330 73	1	0	62	1029 91	1	0	81	52448 00	1	0	100

COUNT MIDPOINT ONE SYMBOL EQUALS APPROXIMATELY 8.00 OCCURRENCES

213	1244	*****
9	3742	*
2	6240	
4	8738	*
1	11236	
3	13734	
0	16232	
0	18730	
1	21228	
1	23726	
0	26224	
1	28722	
0	31220	
0	33718	
0	36216	
0	38714	
0	41212	
0	43710	
0	46208	
0	48706	
1	51204	

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0 80 160 240 320 400
HISTOGRAM FREQUENCY

MEAN	1361.574	STD ERR	309.551	MEDIAN	149.720
MODE	0.0	STD DEV	4755.416	VARIANCE	22613985.3
KURTOSIS	63.393	S E KURT	1.992	SKEWNESS	7.118
S E SKEW	158	RANGE	52448.000	MINIMUM	0.0
MAXIMUM	52448.000	SUM	321331.465		

PERCENTILE	VALUE	PERCENTILE	VALUE	PERCENTILE	VALUE
10.00	0.0	25.00	0.0	33.30	0.0
50.00	149.720	66.70	385.413	75.00	566.316
90.00	2332.080				
VALID CASES	236	MISSING CASES	0		

Roof and roof-mounted apparatus items and material types

CAPEA EXPOSED CHIMNEY AREA

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	0	114	48.3	48.3	48.3
	4	1	.4	.4	48.7
	6	1	.4	.4	49.2
	8	1	.4	.4	49.6
	10	8	3.4	3.4	53.0
	12	1	.4	.4	53.4
	15	1	.4	.4	53.8
	16	1	.4	.4	54.2
	18	2	.8	.8	55.1
	20	10	4.2	4.2	59.3
	24	1	.4	.4	59.7
	25	1	.4	.4	60.2
	28	1	.4	.4	60.6
	30	12	5.1	5.1	65.7
	36	3	1.3	1.3	66.9
	40	7	3.0	3.0	69.9
	48	1	.4	.4	70.3
	50	5	2.1	2.1	72.5
	60	11	4.7	4.7	77.1
	63	1	.4	.4	77.5
	64	2	.8	.8	78.4
	70	4	1.7	1.7	80.1
	80	8	3.4	3.4	83.5
	90	2	.8	.8	84.3
	100	9	3.8	3.8	88.1
	110	1	.4	.4	88.6
	112	1	.4	.4	89.0
	120	5	2.1	2.1	91.1
	121	1	.4	.4	91.5
	130	1	.4	.4	91.9
	136	1	.4	.4	92.4
	140	1	.4	.4	92.8
	160	2	.8	.8	93.6
	170	3	1.3	1.3	94.9
	200	4	1.7	1.7	96.6
	206	1	.4	.4	97.0
	400	2	.8	.8	97.9
	120	1	.4	.4	98.3
	600	1	.4	.4	98.7
	800	1	.4	.4	99.2
	1800	2	.8	.8	100.0
TOTAL		236	100.0	100.0	

AREA EXPOSED CHIMNEY AREA

COUNT MIDPOINT ONE SYMBOL EQUALS APPROXIMATELY 4.00 OCCURRENCES

197	40	*****
24	125	*****
8	212	**
0	298	
3	384	*
0	470	
0	556	
1	642	
0	728	
1	814	
0	900	
0	986	
0	1072	
0	1158	
0	1244	
0	1330	
0	1416	
0	1502	
0	1588	
0	1674	
2	1760	*

HISTOGRAM FREQUENCY

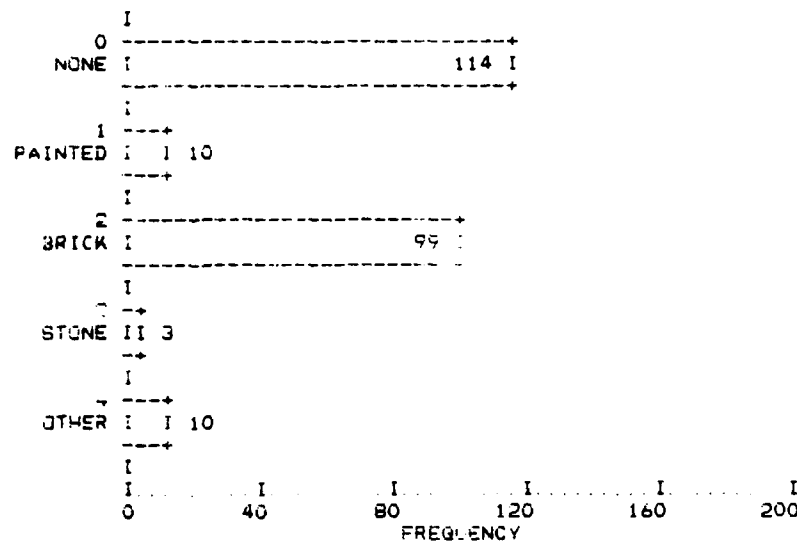
MEAN	58.288	STD ERR	11.979	MEDIAN	10.000
MODE	0.0	STD DEV	184.031	VARIANCE	33867.372
KURTOSIS	68.674	S E KURT	1.992	SKEWNESS	7.754
S E SKEW	.158	RANGE	1800.000	MINIMUM	0.0
MAXIMUM	1800.000	SUM	13756.000		

PERCENTILE	VALUE	PERCENTILE	VALUE	PERCENTILE	VALUE
10.00	0.0	25.00	0.0	33.30	0.0
50.00	10.000	66.70	36.316	75.00	60.000
90.00	120.000				

VALID CASES 236 MISSING CASES 0

CMAT CHIMNEY MATERIAL

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
NONE	0	114	48.3	48.3	48.3
PAINTED	1	10	4.2	4.2	52.5
BRICK	2	99	41.9	41.9	94.5
STONE	3	3	1.3	1.3	95.8
OTHER	4	10	4.2	4.2	100.0
TOTAL		236	100.0	100.0	



MEAN	1.089	STD ERR	.075	MEDIAN	1.000
MODE	0.0	STD DEV	1.154	VARIANCE	1.332
KURTOSIS	-1.613	S E KURT	1.992	SKEWNESS	.545
S E SKEW	.158	RANGE	4.000	MINIMUM	0.0
MAXIMUM	4.000	SUM	257.000		

PERCENTILE	VALUE	PERCENTILE	VALUE	PERCENTILE	VALUE
10.00	0.0	25.00	0.0	33.30	0.0
50.00	1.000	66.70	2.000	75.00	2.000
90.00	2.000				

VALID CASES 236 MISSING CASES 0

ESAREA AREA OF EXPOSED ROOF

VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT	VALUE	FREQ	PCT	CUM PCT
60	1	0	0	2100	1	0	43	10000	5	2	69
210	1	0	1	2160	3	1	44	11250	1	0	70
300	1	0	1	2200	1	0	44	12000	5	2	72
600	2	1	2	2210	2	1	45	13000	1	0	72
720	2	1	3	2240	2	1	46	15000	2	1	73
800	3	1	4	2242	1	0	47	18900	1	0	74
900	1	0	5	2250	4	2	48	20000	4	2	75
1000	5	2	7	2260	1	0	49	22500	1	0	76
1080	3	1	8	2380	2	1	50	25000	3	1	77
1100	4	2	10	2400	7	3	53	26250	1	0	78
1114	1	0	10	2410	1	0	53	30000	5	2	80
1120	1	0	11	2422	1	0	53	40000	6	3	82
1200	15	6	17	2500	1	0	54	45000	1	0	83

1240	1	0	17	2550	2	1	00	50000	4	2	84
1280	1	0	18	2648	1	0	05	55000	1	0	85
1300	2	1	19	2700	1	0	05	60000	7	3	88
1350	2	1	19	2750	1	0	05	62500	3	1	89
1360	1	0	20	2800	2	1	00	70000	1	0	89
1400	5	2	22	2850	1	0	57	75000	2	1	90
1428	1	0	22	2880	1	0	58	80000	3	1	92
1440	3	1	24	2900	1	0	58	90000	1	0	92
1480	1	0	24	3000	2	1	55	100000	3	1	93
1500	6	3	27	3200	2	1	60	104000	1	0	94
1530	1	0	27	3280	1	0	60	110000	1	0	94
1560	1	0	28	3600	1	0	61	120000	3	1	95
1600	11	5	32	4000	4	2	62	125000	1	0	96
1700	3	1	33	4512	1	0	63	135000	1	0	96
1800	10	4	38	4800	1	0	64	160000	3	1	97
1920	2	1	39	5000	3	1	64	175000	1	0	98
1950	1	0	39	5400	1	0	65	180000	1	0	98
2000	5	2	41	5950	1	0	65	240000	1	0	99
2020	1	0	42	6400	3	1	67	300000	1	0	99
2040	1	0	42	7000	1	0	67	315000	1	0	100
2080	1	0	42	7800	1	0	67	488400	1	0	100

COUNT MIDPOINT ONE SYMBOL EQUALS APPROXIMATELY 4.00 OCCURRENCES

179	11680	*****
16	34935	****
15	58190	****
7	81445	**
5	104700	*
5	127955	*
3	151210	*
2	174465	*
0	197720	
0	220975	
1	244230	
0	267495	
1	290740	
1	313995	
0	337250	
0	360505	
0	383760	
0	407015	
0	430270	
0	453525	
1	476780	

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 0 40 80 120 160 200
 HISTOGRAM FREQUENCY

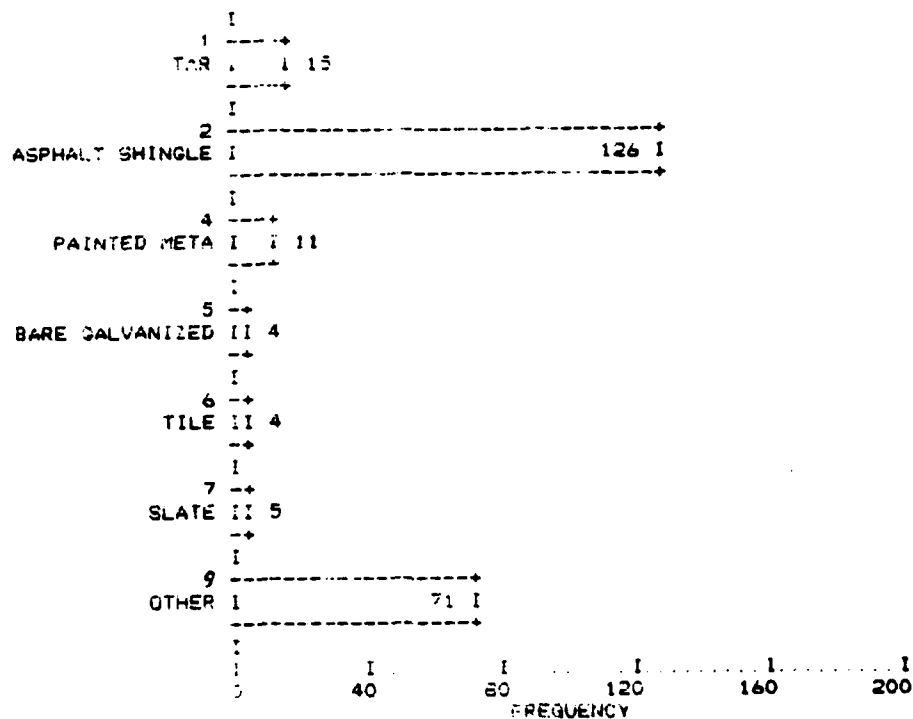
MEAN	24309.983	STD ERR	3618.552	MEDIAN	2400.000
MODE	1200.000	STD DEV	55589.244	VARIANCE	3090164058
KURTOSIS	26.213	S E KURT	1.992	SKEWNESS	4.405
S E SKEW	.158	RANGE	488340.000	MINIMUM	60.000
MAXIMUM	488400.000	SUM	5878756.00		

PERCENTILE	VALUE	PERCENTILE	VALUE	PERCENTILE	VALUE
10.00	1109.800	25.00	1500.000	33.30	1700.000
50.00	2400.000	66.70	7063.200	75.00	20000.000
90.00	76500.000				

VALID CASES 236 MISSING CASES 0

ERMAT ROOF MATERIAL TYPE

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
TAR	1	15	6.4	6.4	6.4
ASPHALT SHINGLE	2	126	53.4	53.4	59.7
PAINTED META	4	11	4.7	4.7	64.4
BARE GALVANIZED	5	4	1.7	1.7	66.1
TILE	6	4	1.7	1.7	67.8
SLATE	7	5	2.1	2.1	69.9
OTHER	9	71	30.1	30.1	100.0
TOTAL		236	100.0	100.0	



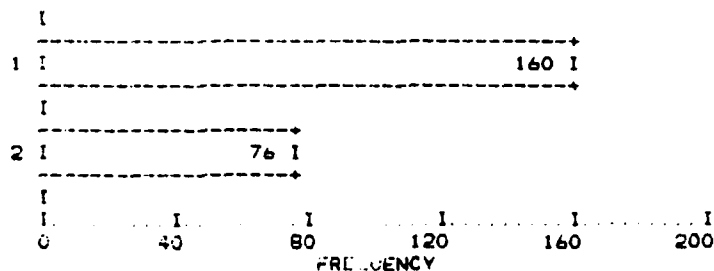
MEAN	4.360	STD ERR	.210	MEDIAN	2.000
MODE	2.000	STD DEV	3.228	VARIANCE	10.419
KURTOSIS	-1.470	S E KURT	1.992	SKEWNESS	.635
S E SKEW	.158	RANGE	8.000	MINIMUM	1.000
MAXIMUM	9.000	SUM	1029.000		

PERCENTILE	VALUE	PERCENTILE	VALUE	PERCENTILE	VALUE
10.00	2.000	25.00	2.000	33.30	2.000
50.00	2.000	66.70	6.000	75.00	9.000
90.00	9.000				

VALID CASES 236 MISSING CASES 0

SLOPE INDICATOR: ROOF SLOPE

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	1	160	67.8	67.8	67.8
	2	76	32.2	32.2	100.0
	TOTAL	236	100.0	100.0	



MEAN	1.322	STD ERR	.030	MEDIAN	1.000
MODE	1.000	STD DEV	.468	VARIANCE	.219
KURTOSIS	-1.424	SKEWNESS	1.992	SKEWNESS	.767
SE SKEW	.158	RANGE	1.000	MINIMUM	1.000
MAXIMUM	2.000	SUM	312.000		

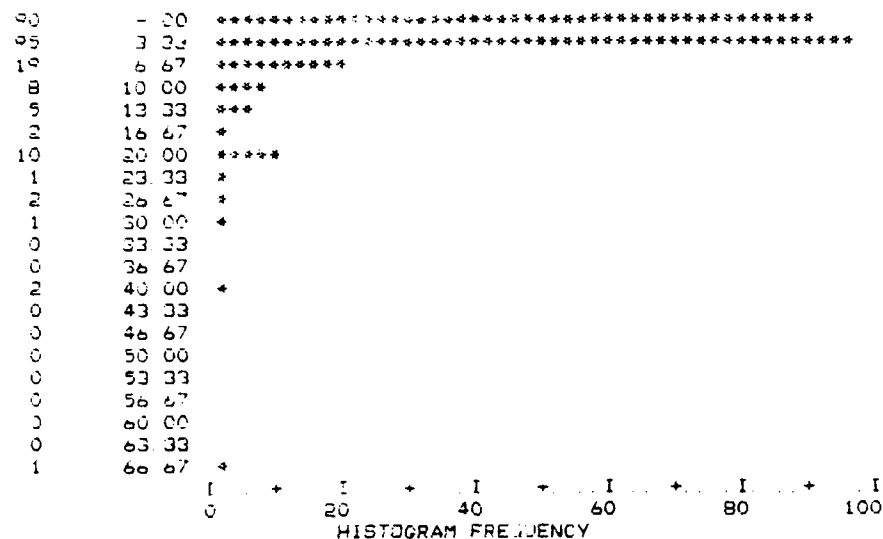
PERCENTILE	VALUE	PERCENTILE	VALUE	PERCENTILE	VALUE
10.00	1.000	25.00	1.000	33.30	1.000
50.00	1.000	66.70	1.000	75.00	2.000
90.00	2.000				

VALID CASES 236 MISSING CASES 0

ITEM1 NO OF VENTS, FLUES, STACKS

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	0	76	32.2	32.2	32.2
	1	14	5.9	5.9	38.1
	2	59	25.0	25.0	63.1
	3	28	11.9	11.9	75.0
	4	8	3.4	3.4	78.4
	5	4	1.7	1.7	80.1
	6	5	2.1	2.1	82.2
	7	6	2.5	2.5	84.7
	8	4	1.7	1.7	86.4
	10	8	3.4	3.4	89.8
	12	4	1.7	1.7	91.5
	14	1	.4	.4	91.9
	15	1	.4	.4	92.4
	18	1	.4	.4	92.8
	20	10	4.2	4.2	97.0
	22	1	.4	.4	97.5
	25	1	.4	.4	97.9
	28	1	.4	.4	98.3
	30	1	.4	.4	98.7
	40	2	.8	.8	99.6
	67	1	.4	.4	100.0
	TOTAL	236	100.0	100.0	

COUNT MIDPOINT ONE SYMBOL EQUALS APPROXIMATELY 2.00 OCCURRENCES



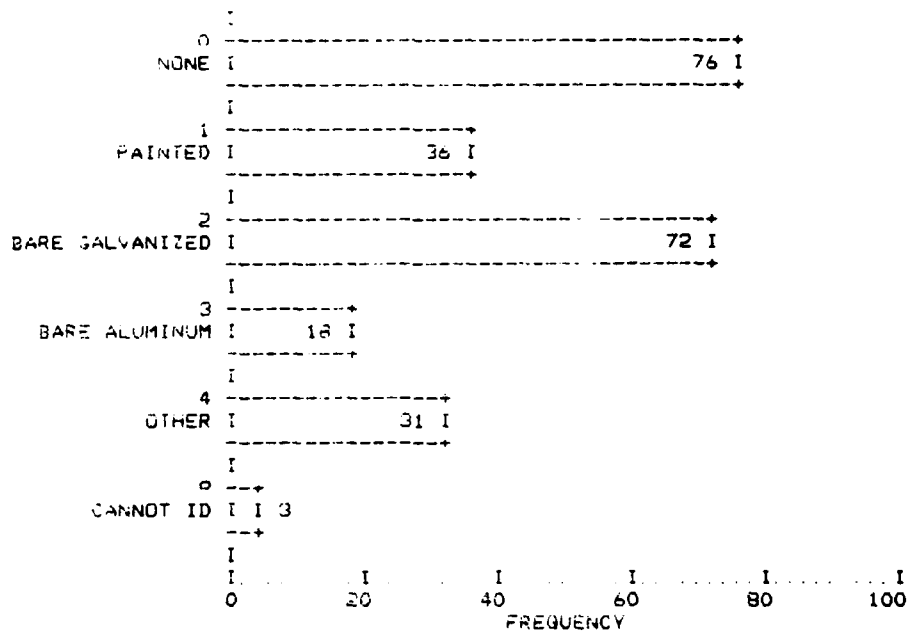
MEAN	4.333	STD. ERR.	.499	MEDIAN	2.000
MODE	0.0	STD. DEV.	7.671	VARIANCE	58.869
KURTOSIS	22.870	S.E. KURT	1.992	SKEWNESS	4.035
S.E. SKEW	.158	RANGE	67.000	MINIMUM	0.0
MAXIMUM	67.000	SUM	999.000		

PERCENTILE	VALUE	PERCENTILE	VALUE	PERCENTILE	VALUE
10.00	0.0	25.00	0.0	33.30	1.000
50.00	2.000	66.70	3.000	75.00	3.750
90.00	12.000				

VALID CASES	736	MISSING CASES	.
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RMAT ROOF APP MATERIAL

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
NONE	0	76	32.2	32.2	32.2
PAINTED	1	36	15.3	15.3	47.5
BARE GALVANIZED	2	72	30.5	30.5	78.0
BARE ALUMINUM	3	18	7.6	7.6	85.6
OTHER	4	31	13.1	13.1	98.7
CANNOT ID	9	3	1.3	1.3	100.0
	TOTAL	236	100.0	100.0	



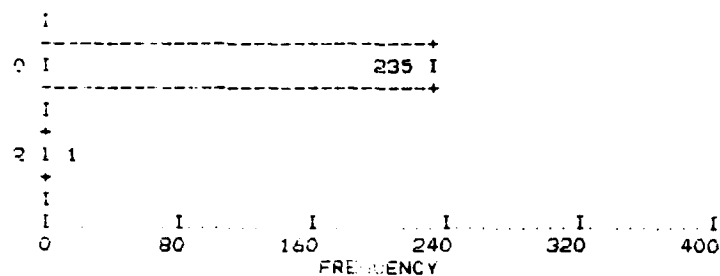
MEAN	1.631	STD ERR	1.04	MEDIAN	2.000
MODE	0.0	STD DEV	1.594	VARIANCE	2.540
KURTOSIS	4.017	S.E. KURT	1.992	SKEWNESS	1.402
S.E. SKEW	1.58	RANGE	9.000	MINIMUM	0.0
MAXIMUM	9.000	SUM	385.000		

PERCENTILE	VALUE	PERCENTILE	VALUE	PERCENTILE	VALUE
10.00	0.0	25.00	0.0	33.30	1.000
50.00	2.000	66.70	2.000	75.00	2.000
90.00	4.000				

VALID CASES 236 MISSING CASES 0

ITEM2 NO OF SKYLIGHTS

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	0	235	99.6	99.6	99.6
	2	1	.4	.4	100.0
	TOTAL	236	100.0	100.0	



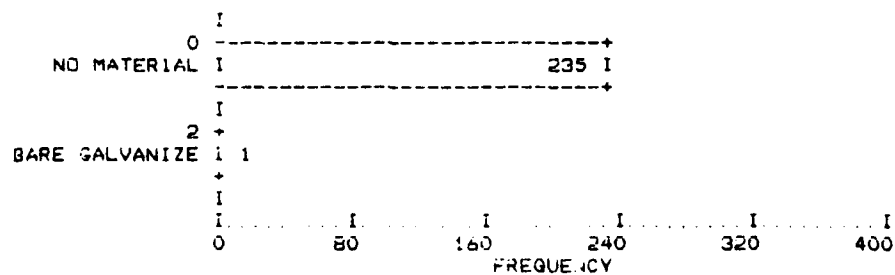
MEAN	.008	STD ERR	.008	MEDIAN	0.0
MODE	0.0	STD DEV	.130	VARIANCE	.017
KURTOSIS	236.000	S E KURT	1.992	SKEWNESS	15.362
S E SKEW	.158	RANGE	2.000	MINIMUM	0.0
MAXIMUM	2.000	SUM	2.000		

PERCENTILE	VALUE	PERCENTILE	VALUE	PERCENTILE	VALUE
10.00	0.0	25.00	0.0	33.30	0.0
50.00	0.0	66.70	0.0	75.00	0.0
90.00	0.0				

VALID CASES 236 MISSING CASES 0

SKYM SKYLIGHT MATERIAL

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
NO MATERIAL	0	235	99.6	99.6	99.6
BARE GALVANIZE	2	1	.4	.4	100.0
	TOTAL	236	100.0	100.0	



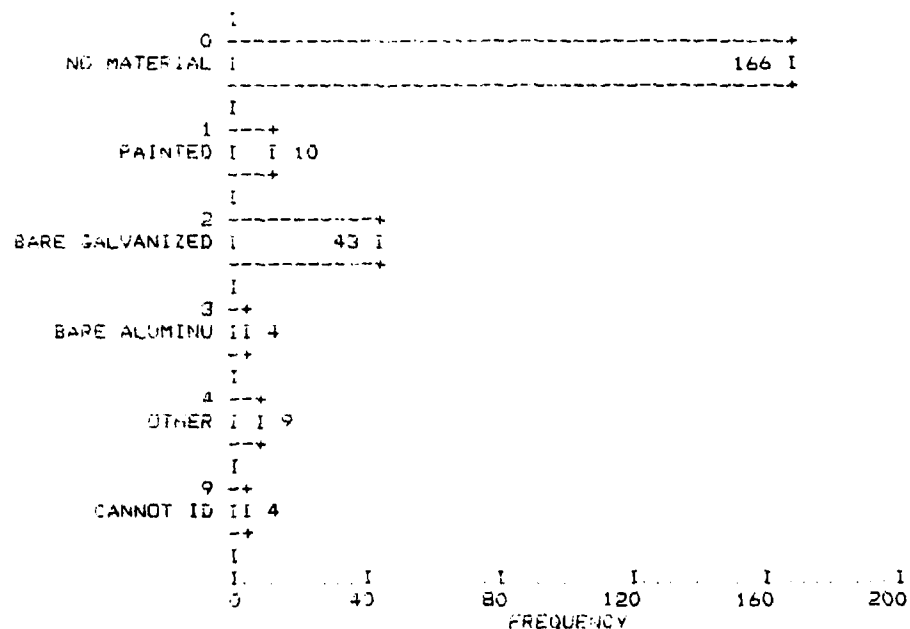
MEAN	.008	STD ERR	.008	MEDIAN	0.0
MODE	0.0	STD DEV	.130	VARIANCE	.017
KURTOSIS	236.000	S E KURT	1.992	SKEWNESS	15.362
S E SKEW	.158	RANGE	2.000	MINIMUM	0.0
MAXIMUM	2.000	SUM	2.000		

PERCENTILE	VALUE	PERCENTILE	VALUE	PERCENTILE	VALUE
10.00	0.0	25.00	0.0	33.30	0.0
50.00	0.0	66.70	0.0	75.00	0.0
90.00	0.0				

VALID CASES 236 MISSING CASES 0

FLMAT FLASHING MATERIAL

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
NO MATERIAL	0	166	70.3	70.3	70.3
PAINTED	1	10	4.2	4.2	74.6
BARE GALVANIZED	2	43	18.2	18.2	92.8
BARE ALUMINU	3	4	1.7	1.7	94.5
OTHER	4	9	3.8	3.8	98.3
CANNOT ID	9	4	1.7	1.7	100.0
TOTAL		236	100.0	100.0	



MEAN	763	STD ERR	099	MEDIAN	0.0
MODE	0.0	STD DEV	1.528	VARIANCE	2.335
KURTOSIS	12.104	S E RT	1.992	SKEWNESS	3.120
S E SKEW	.109	RANGE	9.000	MINIMUM	0.0
MAXIMUM	9.000	SUM	180.000		

PERCENTILE	VALUE	PERCENTILE	VALUE	PERCENTILE	VALUE
10.00	0.0	25.00	0.0	33.30	0.0
50.00	0.0	66.70	0.0	75.00	2.000
90.00	2.000				

VALID CASES 236 MISSING CASES 0

FL AREA FLASHING AREA SQ FT

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	0	164	70.3	70.3	70.3
	1	1	.4	.4	70.8
	2	6	2.5	2.5	73.3
	3	10	4.2	4.2	77.5
	4	12	5.1	5.1	82.6
	5	5	2.1	2.1	84.7
	6	3	1.3	1.3	86.0
	7	2	.8	.8	86.9
	8	4	1.7	1.7	88.6
	9	1	.4	.4	89.0
	10	6	2.5	2.5	91.5
	15	1	.4	.4	91.9
	20	3	1.3	1.3	93.2
	24	2	.8	.8	94.1
	52	1	.4	.4	94.5
	60	1	.4	.4	94.9
	100	2	.8	.8	95.8
	147	1	.4	.4	96.2
	300	1	.4	.4	96.6
	346	1	.4	.4	97.0
	400	3	1.3	1.3	98.3
	460	1	.4	.4	98.7
	510	1	.4	.4	99.2
	720	1	.4	.4	99.6
GREATER THAN 999	999	1	.4	.4	100.0
	TOTAL	236	100.0	100.0	

COUNT MIDPOINT ONE SYMBOL EQUALS APPROXIMATELY 8.00 OCCURRENCES

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222      20 *****
2      40
2      116
1      164
0      212
0      260
1      308
0      356
4      404 *
1      452
0      500
0      548
1      596
0      644
0      692
1      740
0      788
0      836
0      884
0      932
1      980

```

MEAN	23.373	STD ERR	7.042	MEDIAN	0.0
MODE	0.0	STD DEV	108.177	VARIANCE	11702.371
KURTOSIS	41.020	S E KURT	1.992	SKEWNESS	6.053
S E SKEW	158	RANGE	999.000	MINIMUM	0.0
MAXIMUM	999.000	SUM	5516.000		

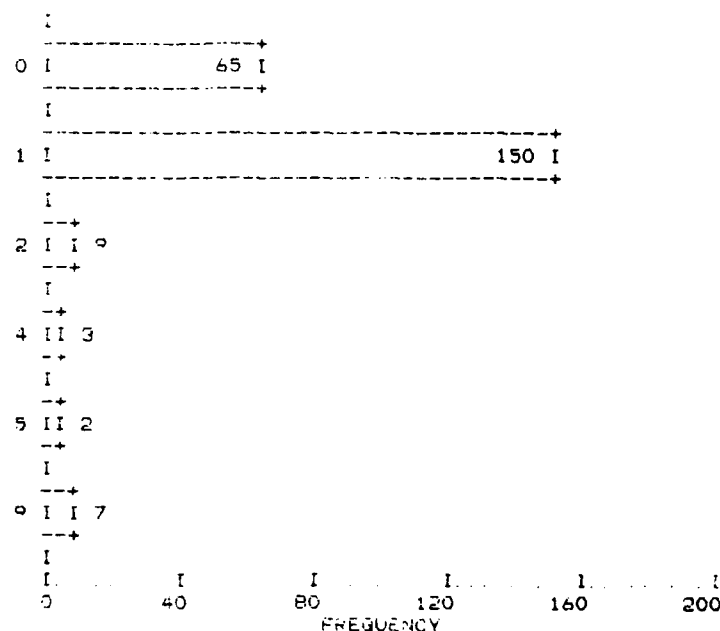
PERCENTILE	VALUE	PERCENTILE	VALUE	PERCENTILE	VALUE
10.00	0.0	25.00	0.0	33.30	0.0
50.00	0.0	66.70	0.0	75.00	3.000
70.00	10.000				

VALID CASES	236	MISSING CASES	0
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Rain gutters, downspouts and fences

RGMAT RAIN GUTTER MATERIAL

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	0	65	27.5	27.5	27.5
	1	150	63.6	63.6	91.1
	2	9	3.8	3.8	94.9
	4	3	1.3	1.3	96.2
	5	2	.8	.8	97.0
	9	7	3.0	3.0	100.0
	TOTAL	236	100.0	100.0	



MEAN	1.072	STD. ERR.	1.02	MEDIAN	1.000
MODE	1.000	STD. DEV.	1.571	VARIANCE	2.467
KURTOSIS	17.350	S.E. KURT	1.992	SKEWNESS	4.000
S.E. SKEW	1.53	RANGE	4.000	MINIMUM	0.0
MAXIMUM	9.000	SLM	253.000		

PERCENTILE	VALUE	PERCENTILE	VALUE	PERCENTILE	VALUE
10.00	0.0	25.00	0.0	33.30	1.000
50.00	1.000	66.70	1.000	75.00	1.000
90.00	1.000				

VALID CASES 236 MISSING CASES 0

RGLENGTH RAIN GUTTER LENGTH

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	0	55	27.5	27.5	27.5
	10	1	.4	.4	28.0
	20	3	1.3	1.3	29.2
	40	6	2.5	2.5	31.8
	50	4	1.7	1.7	33.5
	60	11	4.7	4.7	38.1
	70	4	1.7	1.7	39.8
	72	9	3.8	3.8	43.6
	75	2	.8	.8	44.5
	78	1	.4	.4	44.9
	80	8	3.4	3.4	48.3
	84	1	.4	.4	48.7
	85	1	.4	.4	49.2
	90	4	1.7	1.7	50.8
	92	1	.4	.4	51.3
	100	13	5.5	5.5	56.8
	102	1	.4	.4	57.2
	104	1	.4	.4	57.6
	110	1	.4	.4	58.1
	120	12	5.1	5.1	63.1
	124	1	.4	.4	63.6
	125	2	.8	.8	64.4
	130	10	4.2	4.2	68.6
	132	1	.4	.4	69.1
	134	1	.4	.4	69.5
	140	9	3.8	3.8	73.3
	145	1	.4	.4	73.7
	150	7	3.0	3.0	76.7
	156	1	.4	.4	77.1
	160	8	3.4	3.4	80.5
	172	1	.4	.4	80.9
	180	5	2.1	2.1	83.1
	192	1	.4	.4	83.5
	200	10	4.2	4.2	87.7
	250	3	1.3	1.3	89.0
	260	3	1.3	1.3	90.3
	300	3	1.3	1.3	91.5
	320	1	.4	.4	91.9
	325	1	.4	.4	92.4
	350	1	.4	.4	92.8
	360	1	.4	.4	93.2
	400	3	1.3	1.3	94.5
	480	1	.4	.4	94.9
	500	5	2.1	2.1	97.0
	500	2	.8	.8	97.9
	999	5	2.1	2.1	100.0
TOTAL		236	100.0	100.0	

RAIN GUTTER LENGTH

COUNT MIDPOINT ONE SYMBOL EQUALS APPROXIMATELY 1.50 OCCURRENCES

75	20	*****
45	25	*****
44	115	*****
32	164	*****
11	212	*****
6	260	****
5	318	***
2	356	+
3	404	**
0	452	
6	500	****
0	518	
1	596	+
0	644	
0	672	
0	740	
0	788	
0	836	
0	884	
0	932	
5	980	***

0 15 30 45 60 75
HISTOGRAM FREQUENCY

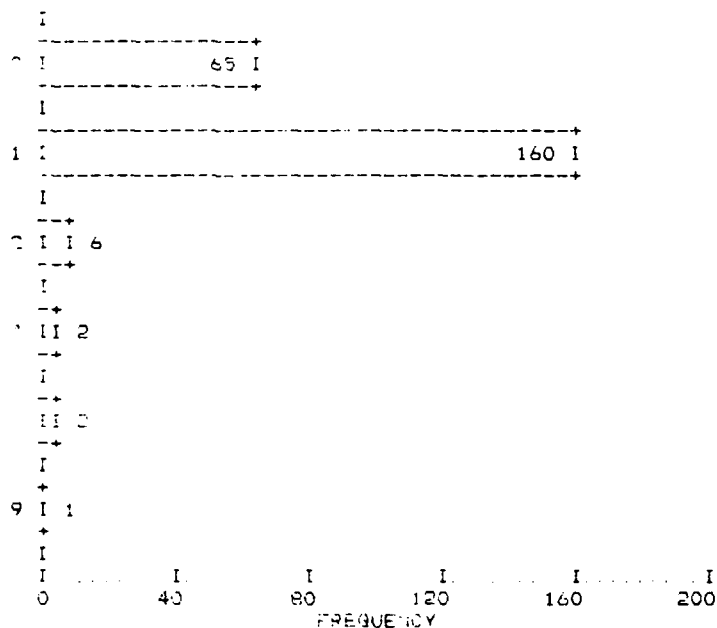
MEAN	126.586	STD ERR	11.277	MEDIAN	90.000
MODE	0.0	STD DEV	173.245	VARIANCE	30013.740
KURTOSIS	12.356	S.E. KURT	1.992	SKEWNESS	3.152
S.E. SKEW	158	RANGE	999.000	MINIMUM	0.0
MAXIMUM	999.000	SUM	29898.000		

PERCENTILE	VALUE	PERCENTILE	VALUE	PERCENTILE	VALUE
10.00	0.0	25.00	0.0	33.30	50.000
50.00	90.000	66.70	130.000	75.00	150.000
90.00	272.000				

VALID CASES 256 MISSING CASES 0

DSFDUT MATERIAL OF DOWNSPOT

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	0	65	27.5	27.5	27.5
	1	160	67.8	67.8	95.3
	2	6	2.5	2.5	97.9
	4	2	.8	.8	98.7
	5	2	.8	.8	99.6
	9	1	.4	.4	100.0
	TOTAL	236	100.0	100.0	



MEAN	1.243	STD. ERR.	.057	MEDIAN	1.000
MODE	1.000	STD. DEV.	.873	VARIANCE	.763
KURTOSIS	36.495	S.E. KURT	1.992	SKEWNESS	4.642
S.E. SKEW	.158	RANGE	9.000	MINIMUM	0.0
MAXIMUM	9.000	SUM	159.000		

PERCENTILE	VALUE	PERCENTILE	VALUE	PERCENTILE	VALUE
10.00	0.0	25.00	0.0	33.30	1.000
50.00	1.000	66.70	1.000	75.00	1.000
90.00	1.000				
VALID CASES	236	MISSING CASES	0		

DSLENG DOWNSPOUT LENGTH

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	0	65	27.5	27.5	27.5
	8	1	.4	.4	28.0
	10	1	.4	.4	28.4
	12	1	.4	.4	28.8
	16	2	.8	.8	29.7
	20	6	2.5	2.5	32.2
	24	5	2.1	2.1	34.3
	25	3	1.3	1.3	35.6
	26	1	.4	.4	36.0
	38	1	.4	.4	36.4
	30	6	2.5	2.5	39.0
	32	6	2.5	2.5	41.5
	35	3	.8	.8	42.4
	40	19	8.1	8.1	50.4
	42	1	.4	.4	50.8
	44	1	.4	.4	51.3
	45	2	.8	.8	52.1
	48	7	3.0	3.0	55.1
	50	12	5.1	5.1	60.2
	52	3	1.3	1.3	61.4
	60	26	11.0	11.0	72.5
	62	1	.4	.4	72.9
	64	1	.4	.4	73.3
	65	2	.8	.8	74.2
	70	3	1.3	1.3	75.4
	71	1	.4	.4	75.8
	72	2	.8	.8	76.7
	78	1	.4	.4	77.1
	80	13	5.5	5.5	82.6
	90	1	.4	.4	83.1
	100	6	2.5	2.5	85.6
	110	1	.4	.4	86.0
	120	10	4.2	4.2	90.3
	125	1	.4	.4	90.7
	128	1	.4	.4	91.1
	140	2	.8	.8	91.9
	150	2	.8	.8	92.8
	160	3	1.3	1.3	94.1
	200	3	1.3	1.3	95.3
	240	2	.8	.8	96.2
	250	1	.4	.4	96.6
	280	2	.8	.8	97.5
	300	2	.8	.8	98.3
	360	1	.4	.4	98.7
	600	1	.4	.4	99.2
	999	2	.8	.8	100.0
TOTAL		236	100.0	100.0	

COUNT MIDPOINT ONE SYMBOL EQUALS APPROXIMATELY 4.00 OCCURRENCES

```

120      20 *****
 76      28 *****
 19      36 *****
  7      44 **
  3      52 *
  5      60 *
  2      68 *
  1      76
  0      84
  0      92
  0     100
  0     108
  1     116
  0     124
  0     132
  0     140
  0     148
  0     156
  0     164
  0     172
  0     180
  0     188
  0     196
  2     204
  
```

```

I  +  I  +  I  +  I  +  I  +  I  +  I
0  40  80 120 160 200
HISTOGRAM FREQUENCY
  
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MEAN	63.648	STD ERR	7.264	MEDIAN	40.000
MODE	0.0	STD DEV	111.593	VARIANCE	12452.986
KURTOSIS	43.067	S E KURT	1.992	SKEWNESS	5.797
S E SKEW	158	RANGE	999.000	MINIMUM	0.0
MAXIMUM	999.000	SUM	15021.000		

PERCENTILE	VALUE	PERCENTILE	VALUE	PERCENTILE	VALUE
10.00	0.0	25.00	0.0	33.30	24.000
50.00	40.000	66.70	60.000	75.00	70.000
90.00	121.500				

VALID CASES 236 MISSING CASES 0

FENCE FENCE TYPE

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
NONE	0	168	71.2	71.2	71.2
BARE CHAIN LINK	1	43	18.2	18.2	89.4
BARE GALVAN STOCK	2	4	1.7	1.7	91.1
PAINTED	3	7	3.0	3.0	94.1
FIELDSTONE	6	1	.4	.4	94.5
UNPAINTED WOOD	7	10	4.2	4.2	98.7
OTHER	8	3	1.3	1.3	100.0
TOTAL		236	100.0	100.0	


```

      I
      0 -----+
      NONE I                                     168 I
      I -----+
      1 -----+
      BARE CHAIN LINK I         43 I
      I -----+
      I -----+
      2 -----+
      BARE GALVAN STOCK I I 4
      I -----+
      I -----+
      3 -----+
      PAINTED I I 7
      I -----+
      I -----+
      6 -----+
      FIELDSTONE I 1
      I -----+
      I -----+
      7 -----+
      UNPAINTED WOOD I I 10
      I -----+
      I -----+
      8 -----+
      OTHER I I 3
      I -----+
      I -----+
      I -----+
      0         40         80         120         160         200
      FREQUENCY

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MEAN	729	STD ERR	114	MEDIAN	0 0
MODE	0 0	STD DEV	1 744	VARIANCE	3 041
KURTOSIS	8 700	S E KURT	1 992	SKEWNESS	3 069
S E SKEW	158	RANGE	8 000	MINIMUM	0 0
MAXIMUM	8 000	SUM	172 000		

PERCENTILE	VALUE	PERCENTILE	VALUE	PERCENTILE	VALUE
10 00	0 0	25 00	0 0	33 30	0 0
50 00	0 0	66 70	0 0	75 00	1 000
90 00	2 000				

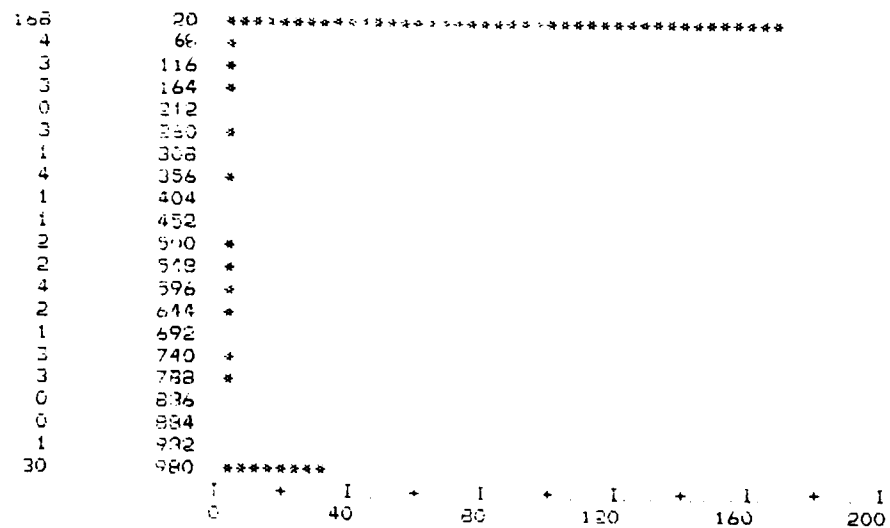
VALID CASES	236	MISSING CASES	0
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FAREA FENCE AREA

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	0	168	71 2	71 2	71 2
	60	1	.4	.4	71 6
	80	1	.4	.4	72 0
	90	2	.8	.8	72 9
	120	3	1 3	1 3	74 2
	150	1	.4	.4	74 6
	180	2	.8	.8	75 4
	240	2	.8	.8	76 3
	280	1	.4	.4	76 7
	300	1	.4	.4	77 1
	360	4	1 7	1 7	78 8
	400	1	.4	.4	79 2
	450	1	.4	.4	79 7
	480	1	.4	.4	80 1
	520	1	.4	.4	80 5
	525	1	.4	.4	80 9
	540	1	.4	.4	81 4
	600	4	1 7	1 7	83 1
	630	1	.4	.4	83 5

640	1	4	4	83.9
700	1	4	4	84.3
720	1	4	4	84.7
730	1	4	4	85.2
750	1	4	4	85.6
800	3	13	13	86.9
920	1	4	4	87.3
999	30	12.7	12.7	100.0
<hr/>				
TOTAL	236	100.0	100.0	

COUNT MIDPOINT ONE SYMBOL EQUALS APPROXIMATELY 4.00 OCCURRENCES



MEAN	196.886	STD. DEV.	23.373	MEDIAN	0.0
MODE	0.0	STD. DEV.	359.053	VARIANCE	128926.238
KURTOSIS	.608	S.E. KURT	1.992	SKEWNESS	1.523
S.E. SKEW	.158	RANGE	999.000	MINIMUM	0.0
MAXIMUM	999.000	SUM	46465.000		

PERCENTILE	VALUE	PERCENTILE	VALUE	PERCENTILE	VALUE
10.00	0.0	25.00	0.0	33.30	0.0
50.00	0.0	66.70	0.0	75.00	180.000
90.00	999.000				

VALID CASES	236	MISSING CASES	0
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